

The University of Chicago

THE RELATION OF EDUCATIONAL  
STATUS TO ECONOMIC STATUS  
IN THE CITY OF CHICAGO,  
BY CENSUS TRACTS, 1934

A DISSERTATION SUBMITTED TO THE FACULTY  
OF THE DIVISION OF THE SOCIAL SCIENCES  
IN CANDIDACY FOR THE DEGREE OF DOCTOR  
OF PHILOSOPHY

DEPARTMENT OF SOCIOLOGY

1936

By  
RICHARD O. LANG

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## CHAPTER I

### INDEXES OF EDUCATIONAL STATUS

In the history of census taking in the United States, questions on education have been asked since 1870. The question on school attendance was tabulated in such a way as to reveal only the number of persons attending school with no differentiation as to age. Illiteracy was defined as the inability to read and write English. Refinements to these two initial attempts to get at the educational status came with succeeding decennial censuses. In the past we have had to make inferences from these incomplete and inadequate records as to the educational status of a given population. The importance of education in our present social order makes it necessary to ask more pointed questions to secure more adequate data on educational status.

In the 1934 census of the city of Chicago, there were several new questions on the population schedule which had never been included in the regular decennial population census of the United States. Among these new questions there was one which sought to secure information on the educational achievement of the population. The last grade completed in school was secured for the entire population of Chicago. The question referred only to general education in public, private or parochial schools or colleges, and omitted any training which may have been secured in trade or vocational schools, unless they were a part of the regular school curriculum. The last grade completed in school was tabulated for the population eighteen years of age and over, by sex and nativity or color, for each of the 935 census tracts in the city.<sup>1</sup>

Thus for the first time there are available statistics for Chicago on the various levels of educational achievement for the entire adult population. By the tabulation of these data by census tracts it is possible to discover the variations in

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<sup>1</sup>The census tract is a permanent statistical unit, varying in size from one square mile to an eighth square mile, by which certain population data is tabulated by the Bureau of the Census.

educational status throughout the entire city. This detailed tabulation opens up the opportunity to make rather refined analyses of population characteristics in different areas. The purpose of the present study is to discover what relationship exists between educational status and economic status by census tracts.

#### Census Approaches to Educational Status

In the decennial census of population taken by the Bureau of the Census, there has been collected some information which approximates an index of the educational status of a given population group. Two items are tabulated and published which aid in securing a rough measure of the educational levels of states, counties, and cities. These two measures are (1) the number of persons attending school in certain age groups, and (2) the number of illiterates. For Chicago and some other cities the data on illiteracy are tabulated by census tracts.

The data which gives the number of children attending school fails to give an accurate index of educational status of the community since it includes only persons under twenty-one years of age. It does, however, reflect accurately what might be called a current view of the school attendance beyond the compulsory educational limit. The compulsory age of school attendance varies from state to state, but where the compulsory age limit is uniform it would be possible to measure the interest in education as evidenced by the percentage of children who continue to attend school beyond the compulsory limit. This can be done for Chicago. Table I presents the school attendance by single years of age of the population fourteen to twenty in Chicago for 1930.<sup>1</sup> This table exhibits the dropping off of school attendance after the age of compulsory attendance is reached.

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<sup>1</sup>U. S. Census, 1930, II, 1091: "The statistics of school attendance obtained in the census of 1930 are based upon the answer to a question on the Population Schedule as to whether the person enumerated had attended school or college at any time between September 1, 1929, and the census date, April 1, 1930. If the person had attended any kind of school, college, or other educational institution at any time within the period in question, an affirmative was to be made. The total number of persons returned as attending school is therefore larger than the number who were in attendance at any one time between September 1, 1929, and April 1, 1930."

TABLE I

SCHOOL ATTENDANCE BY SINGLE YEARS OF AGE FROM 14 TO 20,  
BY SEX, FOR CHICAGO: 1930\*

| Age | Both Sexes   |                    | Males        |                    | Females      |                    |
|-----|--------------|--------------------|--------------|--------------------|--------------|--------------------|
|     | Total Number | Per Cent Attending | Total Number | Per Cent Attending | Total Number | Per Cent Attending |
| 14  | 57,589       | 97.6               | 29,026       | 98.0               | 28,563       | 97.2               |
| 15  | 56,327       | 92.2               | 28,099       | 93.8               | 28,228       | 90.6               |
| 16  | 56,705       | 73.4               | 27,732       | 77.0               | 28,973       | 70.0               |
| 17  | 58,922       | 42.8               | 29,046       | 46.9               | 29,876       | 38.8               |
| 18  | 60,542       | 24.9               | 28,260       | 29.8               | 32,282       | 20.6               |
| 19  | 60,079       | 17.1               | 28,587       | 21.3               | 31,492       | 13.3               |
| 20  | 60,807       | 12.6               | 28,008       | 16.2               | 32,799       | 9.5                |

\*From Fifteenth Census of the United States: 1930, II, 1147.

First let us examine the figures which combine males and females. Of the population fourteen years of age in Chicago in 1930, 97.6 per cent were attending school; of those fifteen years of age, 92.2 per cent were attending. The compulsory age law for Illinois is interpreted<sup>1</sup> by the Board of Education in Chicago that children must attend school until they have reached the age of seventeen, unless they can secure a permit to work at the age of sixteen and attend a continuation school until they reach seventeen. Despite this only 73.8 per cent of those sixteen years were attending school.

The effect of this dropping off becomes even more apparent in the age groups seventeen to twenty. While 73.8 per cent of those sixteen years of age were attending school, the proportion dropped 31.0 per cent at age seventeen. From the age seventeen to the age eighteen the drop was 17.9 per cent; the drop from eighteen years of age to nineteen years of age was 7.8 per cent. At age twenty only 12.6 of the population were attending school. The difference in per cent attending school at sixteen years of age as compared with those attending school at twenty years of

<sup>1</sup>Although the Illinois law states that children may leave school at the age of fourteen if the board of education gives them a permit to work, the Chicago Board of Education does not issue work permits until a child has reached the age of sixteen and this same child must attend continuation school until he reaches the age of seventeen.



age was 61.2 per cent.

The sex differences of school attendances are fairly well marked. In each age group from fourteen to twenty years there are a greater proportion of males attending school than females. The drop in per cent attending for the females was greater in each age period until the age of eighteen. From eighteen to nineteen years, the proportion of males dropped 8.5 per cent, while the proportion of females dropped 7.3 per cent; from nineteen to twenty years the percentage of males dropped 5.1 while the drop in the percentage of females was 3.8. The greatest difference between the sexes was in group eighteen years of age. The proportion of males attending school was 9.2 per cent more than the proportion of females attending. Since males attend school in greater proportions than females in every age period from fourteen to twenty, it should follow that in the general population the proportion of males completing the upper grades, particularly high school grades, would be greater the proportion of females. That this is not true of Chicago's present adult population will be shown later in this chapter.

This measure of educational status is not only an inadequate one because it gives merely the current statement of children in school, but more important, it fails to tell how far these persons have gone in school. It throws no light on such questions as: Have they graduated from the eighth grade, completed two years of high school, four years of high school, or completed some college work?

Another approach to an index of educational status is the number of illiterates in the population. The illiterates may be considered at the lowest end of the education continuum, since they are the part of the population who can neither read nor write in any language.

The Census Bureau defines as illiterate any person 10 years of age and over who is not able to read and write, either in English or some other language. The classification is based on the answers given to the enumerator in response to the question "Whether able to read and write." No specific test of ability to read and write was prescribed but the enumerators were instructed not to return the answer "Yes" (which would classify the person as literate) simply because the person was able to write his or her name.<sup>1</sup>

The inadequacy of illiteracy as an index of educational status is

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<sup>1</sup>U. S. Census, 1930, II, 1219.

pointed out again in the Census publication by stating that the illiterates may be assumed to be those persons who have never had any education.<sup>1</sup>

In Chicago in 1930 there were 90,847 illiterates in the population eighteen years of age and over; this represented 3.8 per cent of the total population in this age group. The sex difference of the illiterates was rather wide; 56 per cent of the illiterates were female while the female population as a whole was 48 per cent of the total population eighteen years and over. These facts are set forth in Table II.

TABLE II  
ILLITERATES IN THE POPULATION 10 YEARS OF AGE AND OVER, AND  
18 YEARS OF AGE AND OVER, BY SEX FOR CHICAGO: 1930\*

|             | Sex and Age | Total Number<br>1930 | Illiterate |          |
|-------------|-------------|----------------------|------------|----------|
|             |             |                      | Number     | Per Cent |
| Total.....  | 10 and Over | 2,846,622            | 91,474     | 3.2      |
| Male.....   | 10 and Over | 1,442,729            | 40,298     | 2.8      |
| Female..... | 10 and Over | 1,403,893            | 51,176     | 3.6      |
| Total.....  | 18 and Over | 2,390,942            | 90,847     | 3.8      |
| Male.....   | 18 and Over | 1,215,796            | 39,978     | 3.3      |
| Female..... | 18 and Over | 1,175,146            | 50,869     | 4.3      |

\*From Fifteenth Census of the United States: 1930, II, 1276.

One of the principal short-comings of this index is that since 96.2 of the population are not illiterate, they are treated as a homogeneous group insofar as illiteracy is to be used as an index of educational status. The persons who can only read and write are placed in the same group as the persons who are high school or college graduates. It has generally been assumed that a low degree of illiteracy denotes a high educational status.

<sup>1</sup>U. S. Census, 1930, II, 1219: "It should be noted that ability to read and write can not be defined so precisely as to cover all cases with certainty. A person may know the alphabet and a small number of printed words and yet not be able to read in a true sense; or he may be able to write his name or other disconnected words, but wholly unable to express his thoughts in writing in any satisfactory fashion. In general, the illiterate population as shown by the census may be assumed to comprise only those persons who have had no education whatever."

This assumption could hardly hold for a population with a low degree of illiteracy but in which a majority had completed but five or six grades of school compared with a population with the same degree of illiteracy but in which a much greater percentage had completed high school. In the former population one would hardly say that there was a "high" educational status as contrasted with the latter.

The shortcomings of an index closely allied to illiteracy which might serve as a measuring rod for educational status is shown by the 1934 census data for Chicago. Although no data on illiteracy is available there was tabulated, by census tracts, the number of persons who had no formal education. From this tabulation it was possible to compute percentage of persons who had never attended school. From this same tabulation there was computed the median grade completed for each tract. Table III gives, by census tracts, the percentage of persons who have never attended school, classified according to the median grade completed in school.<sup>1</sup>

From the first column, of Table III, one notes that there are 221 tracts in the city which have less than one per cent of the population who have never attended school. It is important to observe that the variation in these same tracts of the median grade completed is from the sixth grade (6.0 - 6.4) to one year in college (13.0 - 13.4). This variation shows the striking difference between educational achievement in the tracts which because of the low per cent of persons never having attended a school, might be considered as one group. On the average, the population in 37 of these 221 tracts have not completed the eighth grade, in 93 have completed the 8th grade or one year of high school, in 78 have completed two or three years of high school, and in 13 tracts have completed high school or attended college. It is fairly obvious from the figures that there may be wide variations in educational status in a population having the same percentage of persons who have never attended school.

That the illiterates in a population, if they may be regarded as synonymous with those that never attended school, are a measure of something other than educational status is again

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<sup>1</sup>The median is a measure of central tendency, a value so selected that 50 per cent of the total number of cases, when arranged in order of magnitude, lie below it, and 50 per cent above it.



brought out by examining the variation in the percentage never having attended school within a group of tracts falling into the same class of median grade completed. For example, referring to this same table, it will be noted that in the group who have completed 6.0 to 6.4 grades in school, the range of percentage of those with no education is from 6-9 per cent to 30-34 per cent.

TABLE III  
CENSUS TRACTS IN CHICAGO SHOWING THE PER CENT NEVER  
ATTENDING SCHOOL CLASSIFIED BY THE MEDIAN  
GRADE COMPLETED\*

| Median<br>Grade in<br>School | Per Cent Never Attended School |     |    |    |    |    |     |       |       |       |       |       |       |       | Census<br>Tracts<br>Total |
|------------------------------|--------------------------------|-----|----|----|----|----|-----|-------|-------|-------|-------|-------|-------|-------|---------------------------|
|                              | 0                              | 1   | 2  | 3  | 4  | 5  | 6-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35-39 | 40-44 |                           |
| 4.5-4.9                      | .                              | .   | .  | .  | .  | .  | 1   | .     | .     | .     | .     | .     | .     | .     | 1                         |
| 5.0-5.4                      | .                              | .   | .  | .  | .  | .  | .   | 1     | 1     | 3     | 2     | 1     | .     | 1     | 9                         |
| 5.5-5.9                      | .                              | .   | .  | .  | .  | .  | 1   | 1     | 7     | 3     | 2     | .     | 1     | .     | 15                        |
| 6.0-6.4                      | .                              | .   | .  | .  | .  | .  | 8   | 14    | 11    | 7     | 4     | 1     | .     | .     | 45                        |
| 6.5-6.9                      | 1                              | .   | 2  | 1  | 3  | 5  | 33  | 31    | 11    | 4     | .     | 2     | .     | .     | 93                        |
| 7.0-7.4                      | 6                              | 9   | 10 | 18 | 16 | 11 | 23  | 5     | 3     | 3     | 1     | .     | .     | .     | 105                       |
| 7.5-7.9                      | 30                             | 48  | 37 | 14 | 12 | 2  | 16  | 3     | 2     | .     | .     | .     | .     | .     | 164                       |
| 8.0-8.4                      | 34                             | 43  | 11 | 6  | 5  | 2  | 3   | 2     | 1     | 1     | .     | 1     | .     | .     | 109                       |
| 8.5-8.9                      | 24                             | 21  | 9  | 2  | .  | 2  | 3   | 1     | .     | .     | .     | .     | .     | .     | 62                        |
| 9.0-9.4                      | 22                             | 7   | 4  | 1  | 1  | .  | .   | 1     | .     | .     | .     | .     | .     | .     | 36                        |
| 9.5-9.9                      | 13                             | 3   | 2  | .  | .  | 1  | .   | .     | .     | .     | .     | .     | .     | .     | 19                        |
| 10.0-10.4                    | 7                              | 2   | .  | .  | .  | 1  | .   | .     | .     | .     | .     | .     | .     | .     | 10                        |
| 10.5-10.9                    | 11                             | 4   | .  | .  | .  | .  | .   | .     | .     | .     | .     | .     | .     | .     | 15                        |
| 11.0-11.4                    | 28                             | 1   | 1  | .  | .  | .  | .   | .     | .     | .     | .     | .     | .     | .     | 30                        |
| 11.5-11.9                    | 32                             | .   | 1  | .  | .  | .  | .   | .     | .     | .     | .     | .     | .     | .     | 33                        |
| 12.0-12.4                    | 8                              | .   | .  | .  | .  | .  | .   | .     | .     | .     | .     | .     | .     | .     | 8                         |
| 12.5-12.9                    | 3                              | .   | .  | .  | .  | .  | .   | .     | .     | .     | .     | .     | .     | .     | 3                         |
| 13.0-13.4                    | 2                              | .   | .  | .  | .  | .  | .   | .     | .     | .     | .     | .     | .     | .     | 2                         |
| Total                        | 221                            | 138 | 77 | 42 | 37 | 24 | 88  | 59    | 36    | 21    | 9     | 5     | 1     | 1     | 759                       |

\*From Census Data of the City of Chicago: 1934, Table VI.

Even in the group of tracts which on the average have completed elementary school (8.0 to 8.4 grades) the variation of the percentage who have had no education is from less than one per cent to 30-34 per cent. An examination of the other columns and rows in this table bring out rather conclusively that using the very lowest end of the educational continuum, namely no schooling at all, is a very inaccurate as well as inadequate measure of the educational level or status of a population in a given area.

There is one other measure which might be suggested as a possibility for an index of educational status. Since the 1890 census the foreign born white population has been asked the question on ability to speak English.<sup>1</sup> This information is important for educators who are attempting to find out how many persons may be taught to speak our language. It fails, however, as a measure of educational status for any population since it deals only with the foreign born whites and does not take into account the fact that these same foreign born whites may have had considerable education in their country of origin.

#### Educational Status of Chicago's Population

To present some general picture of the educational level of the city of Chicago as a whole there is given in Table IV the number and percentage distribution of the population by various grades completed in school.

TABLE IV

GRADE COMPLETED IN SCHOOL FOR THE POPULATION 18 YEARS OF AGE AND OVER, BY SEX, FOR CHICAGO: 1934\*

| Grade Completed in School | Total     |          | Male      |          | Female    |          |
|---------------------------|-----------|----------|-----------|----------|-----------|----------|
|                           | Number    | Per Cent | Number    | Per Cent | Number    | Per Cent |
| Total                     | 2,364,478 | 100.0    | 1,179,993 | 100.0    | 1,184,485 | 100.0    |
| None                      | 111,071   | 4.7      | 54,161    | 4.6      | 56,910    | 4.8      |
| 1 - 4                     | 161,232   | 6.8      | 85,205    | 7.2      | 76,027    | 6.4      |
| 5 - 8                     | 1,161,772 | 49.1     | 583,264   | 49.4     | 578,508   | 48.8     |
| 9 -10                     | 284,698   | 12.0     | 133,177   | 11.3     | 151,521   | 12.8     |
| 11 -12                    | 420,817   | 17.8     | 192,377   | 16.3     | 228,440   | 19.3     |
| 13 & Over                 | 205,185   | 8.7      | 119,056   | 10.1     | 86,129    | 7.3      |
| Unknown                   | 19,703    | .8       | 12,753    | 1.1      | 6,950     | .6       |

\*Compiled from tract totals, Census Data of the City of Chicago: 1934, Table VI, pp. 557-652.

<sup>1</sup>U. S. Census, 1930, II, 1347: "The inquiry as to ability to speak English has been made at each of the last five censuses, beginning with that of 1890. The determination of this ability has been left to the judgment of the enumerator, and no specific tests of the knowledge of the English language have been

In the city there were 111,071 persons who had never attended school. This number represented 4.7 per cent of the population eighteen years of age and over. Referring to the table on illiterates in the population of 1930 (Table II), it will be noted that 3.8 per cent of Chicago's population were illiterate. It might be expected that among those who have never attended school there would be a considerable number who would be able to read and write. It is interesting also, that the sex difference among this lowest educational achievement level is not as marked as it was in the case of the illiterate population. Of the 111,071 who had never attended school 51 per cent were female as compared to illiterates of whom 56 per cent were female. This may indicate that there were a large number of men who were literate but had no formal education. Another hypothesis is that since women are the persons from whom most of the census information is secured, they may give their husbands credit for more education than they actually have.

A greater percentage of males than females completed from one to four grades of schooling, and similarly more males completed five to eight grades than did the females. But when the comparison is made of high school attendance the females have a rather significantly higher percentage than the males. There were 32.1 per cent of all the women who had completed from one to four years of high school, while only 27.6 per cent of the males had reached this level of education.

It is a well known fact that men have attended college to a larger extent than women. The data now available for Chicago give further evidence to support this fact; 10.1 per cent of the men had completed one or more years of college while only 7.3 of the women had attained this level. Stating it another way, one can point out that of the total population who had completed one or more years of college, 58 per cent were men and 42 per cent were women. The male population eighteen years of age and over represent slightly less than 51 per cent of the total population of this age.

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prescribed. The standards may therefore be subject to some variation in different parts of the country, but on the whole the replies are believed to indicate the ability or inability to use the English language in ordinary daily activities. The inquiry was made only with respect to persons 10 years old and over."



By using the median as a measure of the average grade completed in school, it is found that for the city as a whole the average was 8.10 grades, with the males' average 8.05 and the females' 8.15. Thus the average adult in Chicago has slightly more than completed elementary school (eighth grade) and the females on the average have a higher educational status than the males.

The first general classification grades completed in school for Chicago population is by nativity or color. By this sort of breakdown it is possible to make comparisons of the educational levels among the four principal nativity or color groups. The next four tables show the number and per cent distribution of the grade completed in school for the (1) native whites of native parentage, (2) the native whites of foreign or mixed parentage, (3) the foreign born, and (4) the negroes.

#### Educational Status of the Native Whites of Native Parentage

Considering first the native whites of native parentage, one finds that less than 1 per cent have never attended school and only 1.5 per cent completed from one to four grades. The sex

TABLE V

GRADE COMPLETED IN SCHOOL OF THE NATIVE WHITES OF  
NATIVE PARENTAGE, 18 YEARS OF AGE AND OVER,  
BY SEX, FOR CHICAGO: 1934\*

| Grade Completed in School | Total   |          | Male    |          | Female  |          |
|---------------------------|---------|----------|---------|----------|---------|----------|
|                           | Number  | Per Cent | Number  | Per Cent | Number  | Per Cent |
| Total                     | 711,610 | 100.0    | 345,567 | 100.0    | 366,043 | 100.0    |
| None                      | 2,951   | .4       | 1,717   | .5       | 1,234   | .3       |
| 1 - 4                     | 10,988  | 1.5      | 5,954   | 1.7      | 5,034   | 1.4      |
| 5 - 8                     | 269,924 | 37.9     | 136,143 | 39.4     | 133,781 | 36.5     |
| 9 - 10                    | 107,125 | 15.1     | 49,471  | 14.3     | 57,654  | 15.8     |
| 11 - 12                   | 204,763 | 28.8     | 89,206  | 25.8     | 115,557 | 31.6     |
| 13 & Over                 | 111,722 | 15.7     | 60,558  | 17.5     | 51,164  | 14.0     |
| Unknown                   | 4,137   | .6       | 2,518   | .7       | 1,619   | .4       |

\*Compiled from tract totals, Census Data of the City of Chicago, 1934, Table VI, pp. 557-652.

differences are very small, with the females having fewer in these two lowest classes in the educational continuum. In the total population of Chicago 11.5 per cent had completed less than five grades while for the native whites of native parentage only 1.9 per cent had this small amount of schooling. Consideration of the upper levels of educational achievement brings out in bold relief the greater proportion of the native whites of native parentage in these categories. While of the population of the city as a whole 29.8 per cent had attended from one to four years of high school, 43.9 per cent of the native whites had completed this amount of schooling. More than half (55 per cent) of all the persons in Chicago who had attended one or more years of college were native whites of native parentage.

In this nativity grouping the sex differences are approximately the same as in the population as a whole. While the males had a higher percentage completing five to eight grades, and one or more years of college, the females had their greatest proportion, 47.4 per cent, in those completing some high school work. This indicates again, as in the case of the city as a whole, that men tend to leave school earlier, and that if they do continue they are more likely to go farther than women. This more or less to be expected since men tend to enter the occupations which require higher education. While the average number of grades completed for the entire city was 8.10, for the native whites of native parentage the average was 9.30 grades, or better than one year of high school.

#### Educational Status of the Native Whites of Foreign or Mixed Parentage

The next nativity group which can be compared to the city as a whole and the preceding discussion is the group of native whites of foreign or mixed parentage.

These persons are the children of foreign parents or one of whose parents were foreign born. The lower educational level of this group is evident in Table VI. It may be inferred that the "second generation" children leave school earlier because they tend to be in the economic classes of society which demand that they begin to earn a living earlier in life.

TABLE VI

GRADE COMPLETED IN SCHOOL OF THE NATIVE WHITES OF  
FOREIGN OR MIXED PARENTAGE 18 YEARS OF AGE  
AND OVER, BY SEX, FOR CHICAGO: 1934\*

| Grade Completed in School | Total   |          | Male    |          | Female  |          |
|---------------------------|---------|----------|---------|----------|---------|----------|
|                           | Number  | Per Cent | Number  | Per Cent | Number  | Per Cent |
| Total                     | 821,901 | 100.0    | 401,781 | 100.0    | 420,120 | 100.0    |
| None                      | 9,375   | 1.1      | 4,800   | 1.2      | 4,575   | 1.1      |
| 1 - 4                     | 25,018  | 3.0      | 12,310  | 3.1      | 12,708  | 3.0      |
| 5 - 8                     | 436,923 | 53.2     | 211,608 | 52.7     | 225,315 | 53.6     |
| 9 -10                     | 125,657 | 15.3     | 58,016  | 14.4     | 67,641  | 16.1     |
| 11 -12                    | 154,433 | 18.8     | 71,880  | 17.9     | 82,553  | 19.6     |
| 13 & Over                 | 64,763  | 7.9      | 39,376  | 9.8      | 25,387  | 6.0      |
| Unknown                   | 5,732   | .7       | 3,791   | .9       | 1,941   | .5       |

\*Compiled from tract totals, Census Data of the City of Chicago: 1934, Table VI, pp. 557-652.

It is interesting to note that the proportion of persons who completed less than five grades of school among this nativity group was twice as great as the proportion attaining this level among the native whites of native parentage; 4.1 per cent of the second generation persons had not completed more than four grades in school. At the other extreme, the opposite proportion is in evidence: the proportion of native whites of native parentage who had attended college is twice as great as the proportion of native whites of foreign or mixed parentage attending college. The proportions at the higher levels of educational status (high school or better) is significantly lower for the persons in the second generation group. Again the sex differences at the various levels of educational achievement are the same as for the city as a whole and for the native whites of native parentage. On the average this nativity grouping completed slightly more than the city as a whole, 8.42 grades as compared to 8.10 grades; this is approximately one grade less than the average for the native whites of native parentage.

#### Educational Status of the Foreign Born Whites

The following table showing the grade completed in school

for the foreign born whites confirms the impression that this nativity group has had very little formal education. The tremendous difference in the amount of education secured by the foreign born persons as compared with the native whites is clearly indicated in the data on educational status obtained from the 1934 census.

TABLE VII

GRADE COMPLETED IN SCHOOL OF THE FOREIGN BORN WHITES 18 YEARS OF AGE AND OVER, BY SEX, FOR CHICAGO: 1934\*

| Grade Completed in School | Total   |          | Male    |          | Female  |          |
|---------------------------|---------|----------|---------|----------|---------|----------|
|                           | Number  | Per Cent | Number  | Per Cent | Number  | Per Cent |
| Total                     | 644,256 | 100.0    | 339,656 | 100.0    | 304,600 | 100.0    |
| None                      | 90,163  | 14.0     | 43,016  | 12.7     | 47,147  | 15.5     |
| 1 - 4                     | 100,120 | 15.5     | 53,445  | 15.7     | 46,675  | 15.3     |
| 5 - 8                     | 358,357 | 55.6     | 187,236 | 55.1     | 171,121 | 56.2     |
| 9 -10                     | 30,972  | 4.8      | 16,535  | 4.9      | 14,437  | 4.7      |
| 11 -12                    | 38,402  | 6.0      | 21,312  | 6.3      | 17,090  | 5.6      |
| 13 & Over                 | 19,467  | 3.0      | 14,100  | 4.2      | 5,367   | 1.8      |
| Unknown                   | 6,775   | 1.1      | 4,012   | 1.2      | 2,763   | .9       |

\*Compiled from tract totals, Census Data of the City of Chicago, 1934, Table VI, pp. 557-652.

Only 13.8 per cent of the foreign born had one year of high school or more, while 29.5 per cent had completed less than fifth-grade. One source of error in this tabulation is that most of these persons have attended school in foreign countries where the grading system is quite different from what it is in the United States. The difficulty of making an equivalent to the amount of schooling attained in our schools in the United States was a serious one. It is impossible to tell how accurately the enumerators were able to get at this equivalent. It is possible that the foreign born person was given a lower grade completed than was actually the case. If this were true then it is probable that the percentage who had completed less than five grades would have been decreased somewhat if there had been available at the time of the census some exact method for calculating an equivalent. But in spite of the errors which probably are present, the



difference between the foreign born whites and the native whites still remains quite large. On the average the foreign born completed 6.44 grades in school. Here, however, the sex differences are reversed from what they were in the native white groupings; the males had a greater proportion the high school grades as well as a greater proportion completing some college work. While 15.4 per cent of men had completed at least one year of high school, only 12.1 per cent of the women had attained this educational status.

#### Educational Status of the Negroes

The level of educational achievement reached by the 175,712 Negroes eighteen years of age and over in Chicago's population presents an interesting study. Most of the Negro migration to Chicago occurred during the World War period and thereafter. Thus most of the adult population, if educated at all, probably received their education in the south. Like the native whites of foreign or mixed parentage and the foreign born whites, more than half of the Negroes completed from 5 to 8 grades of school. But the differences at the extremes are quite marked.

TABLE VIII

GRADE COMPLETED IN SCHOOL FOR NEGROES 18 YEARS OF AGE AND OVER, BY SEX, FOR CHICAGO: 1934\*

| Grade Completed in School | Total   |          | Male   |          | Female |          |
|---------------------------|---------|----------|--------|----------|--------|----------|
|                           | Number  | Per Cent | Number | Per Cent | Number | Per Cent |
| Total                     | 175,712 | 100.0    | 85,180 | 100.0    | 90,532 | 100.0    |
| None                      | 5,856   | 3.3      | 2,858  | 3.4      | 2,998  | 3.3      |
| 1 - 4                     | 22,628  | 12.9     | 11,793 | 13.8     | 10,845 | 12.0     |
| 5 - 8                     | 93,608  | 53.3     | 46,268 | 54.3     | 47,340 | 52.3     |
| 9 -10                     | 20,464  | 11.6     | 8,792  | 10.3     | 11,672 | 12.9     |
| 11 -12                    | 22,408  | 12.8     | 9,356  | 11.0     | 13,052 | 14.4     |
| 13 & Over                 | 8,671   | 4.9      | 4,529  | 5.3      | 4,142  | 4.6      |
| Unknown                   | 2,077   | 1.2      | 1,594  | 1.9      | 483    | .5       |

\*Compiled from tract totals, Census Data of the City of Chicago: 1934, Table VI, pp. 557-652.

The Negroes had 16.2 per cent who had completed less than the fifth grade while the second generation whites had only 4.1 per cent, and the foreign born whites had 29.5 per cent. Thus it is apparent that the Negroes had more schooling than the foreign born, but since most of them lived in the rural south, they did not have as much opportunity to go beyond elementary school as did the native whites of foreign or mixed parentage, many of whom lived in urban communities. The percentage of Negroes who completed one or more grades of high school and one or more years of college represents more than a quarter of the adult Negro population; 29.3 per cent had reached this level of educational status. The sex differences among the Negroes is the same as that for the native whites, that is, more men completed only a few grades and more men completed one or more years of college. The average education of the Negroes was 7.50 grades compared to 8.10 for the city as a whole, and 9.30 for the native whites of native parentage. Again we find that the females had a greater proportion completing high school than the males. The difference between the proportion of males and females attending college was less for the Negroes than for any of the white groups.

A very interesting finding from this initial part of the study was the differentiation between males and females of the grades completed in school. With the exception of the foreign born white, the males in each of the other nativity groups had a greater proportion who had very little education (less than five grades) and also had a greater proportion who had considerable education (eleven or more grades). How can one account for this recurrent difference between the sexes?

One of the first steps taken to attempt an explanation of this difference was to compare these results with the school attendance figures for Chicago. It would be expected that there were a greater proportion of females than males attending school in the high school age groups. Referring to Table I which gives the school attendance for Chicago in 1930 it is found that the males have a greater proportion attending school in every age group. The school attendance figures for 1910 and 1920 reveal this same pattern in Chicago. Thus the explanation is not made from these data.

Several speculations were made to account for this difference in education level reached between the sexes. One possibility is that since Chicago's native born population is made up of many

migrants from the surrounding states, this educational difference might be explained on the basis of a selective process. That is, the kinds of occupations which women can secure in the city probably demand a higher educational level than those of the men. Most of the clerical, stenographic and selling occupations into which women are likely to be attracted from the outside require more education than the unskilled and semi-skilled labor which is offered to men by Chicago's industries. This explanation needs to be given a rigorous test and would be a profitable subject for a future research project. At present very little is known about the social characteristics of the migrants to the city.

Another hypothesis which might be exceedingly interesting and valuable to test is that the males dropped out of school earlier to secure employment, but those who continued to attend stayed beyond the level reached by females. There are many occupations in the professional field which have been traditionally open more to men than to women and require a higher education.

#### The Distribution of Educational Status by Census Tracts

The variations of educational status by the nativity or color groups is striking as Table IX indicates. Ranked in order from highest to lowest, it was found that the native whites of native parentage on the average had the highest average grade completed in school, the native whites of foreign or mixed parentage ranked second, the Negroes third, and the foreign born whites fourth.

TABLE IX

PERCENTAGE DISTRIBUTION OF THE GRADE COMPLETED IN SCHOOL  
FOR THE POPULATION 18 YEARS OF AGE AND OVER, BY  
NATIVITY AND COLOR, FOR CHICAGO: 1954

| Grade Completed in School | Native White Parentage | Native White Foreign or Mixed Parent. | Foreign Born White | Negro | Total All Classes |
|---------------------------|------------------------|---------------------------------------|--------------------|-------|-------------------|
| None                      | .4                     | 1.1                                   | 14.0               | 3.3   | 4.7               |
| 1 - 4                     | 1.5                    | 3.0                                   | 15.5               | 12.9  | 6.8               |
| 5 - 8                     | 37.9                   | 53.2                                  | 55.6               | 53.3  | 49.1              |
| 9 -10                     | 15.1                   | 15.3                                  | 4.8                | 11.6  | 12.0              |
| 11 -12                    | 28.8                   | 18.8                                  | 6.0                | 12.8  | 17.8              |
| 13 & Over                 | 15.7                   | 7.9                                   | 3.0                | 4.9   | 8.7               |
| Unknown                   | .6                     | .7                                    | 1.1                | 1.2   | .8                |
| Total                     | 100.0                  | 100.0                                 | 100.0              | 100.0 | 100.0             |
| Median Grade              | 9.30                   | 8.42                                  | 6.44               | 7.50  | 8.10              |

A much more revealing picture of the variations in educational status in the city is the distribution by small local areas or census tracts. For each tract there was computed the median grade completed in school; the total population eighteen years of age and over was used and no differentiation was made for sex or nativity within each tract. All the tracts were put into rank order by the median grade completed, and divided into six groups with approximately the same number of tracts.

The map shown on page 18, indicates the distribution of these six classes of educational status in the city of Chicago. The solid black shading indicates the tracts having the highest educational status, a range from 9.4 to 13.0 grades completed in school. The dotted shading indicates the lowest class of education status, a range from 4.6 to 6.7 grades completed in school. The legend on the upper right side of the map indicates the classes and the range of medians. The parts of city shaded with diagonal dashes indicate industrial or railroad property, while the other shading not referred to in the legend indicates the parks and cemeteries.

One of the very striking features of this map is the marked concentrations in different areas of the various educational status classes. Beginning about one-fourth of the distance from the top of the map (Belmont avenue and the north branch of the Chicago River, a poor residential area) following the industrial areas south to the "Loop" (the downtown business area) and again southwest along the south branch of the Chicago River and the Drainage Canal through the heavy industry areas, the greatest concentration of lowest educational status is found.

The solid black areas (highest education) follow a somewhat even pattern in the same general way as the lowest education. On the north side, in the higher grade residential zones, along the shore of Lake Michigan, extending somewhat farther from the shore line as one goes farther north. The two fine residential areas on the northwest side of the city, and the apartment house areas on the far west side of the city, comprise the major areas of highest educational status west of the Chicago River. There is a very large area in the low and lowest classes of education before one reaches the residential and apartment areas along the lake shore on the south side, beginning immediately south of Forty-third Street. This area stops abruptly at the beginning of



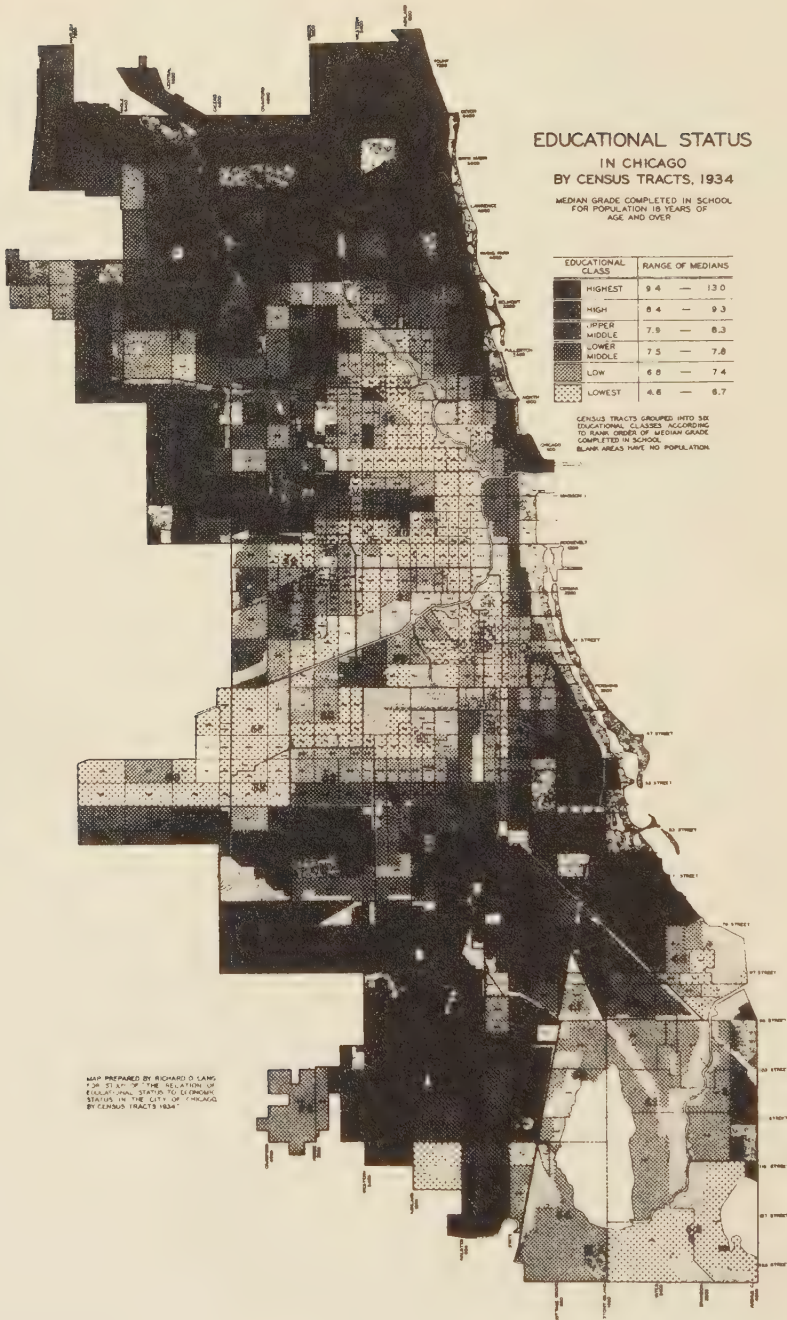
# EDUCATIONAL STATUS

IN CHICAGO  
BY CENSUS TRACTS, 1934

MEDIAN GRADE COMPLETED IN SCHOOL  
FOR POPULATION 15 YEARS OF  
AGE AND OVER

| EDUCATIONAL CLASS | RANGE OF MEDIAN |
|-------------------|-----------------|
| HIGHEST           | 9.4 — 13.0      |
| HIGH              | 8.4 — 9.3       |
| UPPER MIDDLE      | 7.9 — 8.3       |
| LOWER MIDDLE      | 7.5 — 7.8       |
| LOW               | 6.6 — 7.4       |
| LOWEST            | 4.6 — 6.7       |

CENSUS TRACTS GROUPED INTO SIX  
EDUCATIONAL CLASSES ACCORDING  
TO RANGE OF MEDIAN GRADE  
COMPLETED IN SCHOOL.  
BLANK AREAS HAVE NO POPULATION.



MAP PREPARED BY RICHARD D. LANG  
IN 1934, IN THE RELATION OF  
EDUCATIONAL STATUS TO ECONOMIC  
STATUS IN THE CITY OF CHICAGO  
BY CENSUS TRACTS 1934

the heavy industries area at Seventy-ninth Street.

Southwest from this shore line runs an area of high and highest educational status. This is in the better class apartment areas of Chatham, Grand Crossing, and Auburn Gresham. The solid black areas in the lower left part of Chicago residential are areas similar to those on the extreme northwestern section of the city. The communities of Beverly Hills and the western half of Morgan Park make up this southwestern part of the city.

A more detailed explanation of the location of the various educational status classes in relation to the characteristics of the city in which they are found will be given in connection with the discussion of the correlation of educational status with other population indexes. For the present, at least, it is sufficient to point out that the areas which are characterized by the two lowest educational classes are those areas in which are found the highest rates of various social pathologies such as delinquency, crime, dependency, etc.<sup>1</sup>

#### Summary

Any available data which gives new light on some aspect of the characteristics of a population is likely to reveal a different set of factors bearing upon social problems. In the past very little has been known about any population regarding the extent of its education. About the only index to educational status thus far has been illiteracy. But we have seen that this measure is not only inadequate since it deals with only a very small part of the population, but that it is unsuited for measuring the various levels of educational status. There is also known from the various censuses about various population groups regarding the number of children at various ages who are attending school. But again we have found this to be very unsatisfactory since it takes into account only a selected age group, and much more important, it fails to reveal the amount of schooling each person has had; it does not indicate what proportions of the population have spent different lengths of time in school.

This new measure of educational status, namely grade

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<sup>1</sup>See C. R. Shaw and H. D. McKay, "Social Factors in Juvenile Delinquency," National Commission on Law Observance and Enforcement, A Report on the Causes of Crime, II (Washington, D.C.: U. S. Printing Office, 1931), 400 + xv.

completed in school, is much more directly indicative of the actual educational level than are either of the two indexes discussed in the previous paragraph. Using the last grade completed in school is not the most complete index which could be desired. To get a more adequate conception of educational status it would also be important to know the type of school in which this education was secured, that is, whether it was obtained in a rural non-graded school, in a village school, in a parochial school, or in a modern city school. It would also be important to know something of the education received in part time schools such as trade schools, business colleges and evening schools. While it does not satisfy these and other important qualifications, the last grade completed in school does afford a unique index which can be used in a total array of indexes to understand the social characteristics of a population group.

## CHAPTER II

### THE RELATION OF EDUCATIONAL STATUS TO OTHER SOCIAL CHARACTERISTICS OF THE POPULATION

In the previous chapter it was pointed out that various classes of educational status were found to be concentrated in certain sections of the city. The census tracts in which the highest classes of education status seemed to be concentrated were in the better apartment house areas and the areas of single-family dwellings; the concentrations of the lowest educational status seemed to fall within the areas of poor housing near the heavy industries and the interstitial area surrounding the central business district where factories, wholesale establishments, and warehouses are encroaching on residences.

This apparent association of education with housing conditions might be measured statistically. To arrive at a more satisfactory and complete explanation of the wide variation of education over the city and its relation to housing a number of characteristics of the population should be taken into account. Each of these characteristics can be related to education to discover which ones are closely related and can account for this variation, and which ones are unrelated and to which the variation in educational status cannot be attributable.

By constructing a map for each one of the selected population indexes similar to the map on Educational Status, page 18, a rough approximation of the relationship between education and the other indexes is obtained. The concentrations in similar areas of certain sets of population phenomena should enable one to make certain generalizations. This method of comparing the spatial distribution of population characteristics to discover relationships is a useful one particularly when the data do not lend themselves to statistical treatment. But to secure a more exact statement of the association between the various indexes the correlation technique is invaluable. One of the most important contributions of this type of statistical analysis is to bring out more accurately the relationships and enable one to make some



statements regarding the coincidence of various population characteristics.

Nine indexes of the population composition of each tract were chosen to make this analysis. All of the data were secured from the 1934 city of Chicago census. Using these nine factors one has a fairly complete description of the population of each tract. The following list gives the factors chosen:

1. Nativity or color
2. Sex composition
3. Age groupings
4. Fertility rate
5. Marital condition
6. Size of families
7. Length of residence of families
8. Ownership of homes
9. Monthly rental paid

One of the problems which must be met by one who deals with population data is the choosing of the index which will be representative of the factor one wishes to study. For example, if one were using the size of family, there are several ways of expressing the index of size. One might use the per cent of small families in the tracts, the per cent of large families, or some other measure. The choice of the index to be used depends upon what emphasis is to be made. If the emphasis is to be placed upon small families, an index using the percentage of two and three person families would be chosen; if the emphasis were to be on large families, the index could be constructed from the data on the number of families with five or more persons. In the present study more than one measure was computed for each population characteristic in order to discover what differences there would be in the correlation of educational status with each of the various measures.

#### Variation in the Distribution of the Population Indexes

Since the principal problem of this study is to discover the correlation between educational status and economic status, three indexes of each were computed. For each of the remaining eight population characteristics two indexes were computed. The range indicates the highest and lowest value of each population index; this gives some notion as to the wide variation of the population composition among census tracts. The median measures the general tendency or the point around which most of the tracts seem to cluster. By comparing the median with the range one

observes how far some census tracts vary from the general tendency of all tracts.

TABLE X  
RANGE AND MEDIAN FOR EACH OF THE 21 POPULATION INDEXES  
FOR CHICAGO: 1934\*

| Population Index                           | Range |      | Median |
|--------------------------------------------|-------|------|--------|
|                                            | Low   | High |        |
| Per cent Completed less than 5th Grade ... | 0     | 55   | 8.42   |
| Per cent Completed 11th Grade and over ... | 2     | 83   | 19.40  |
| Median Grade Completed.....                | 4.6   | 13.0 | 7.88   |
| Per cent Under \$20 Rental.....            | 0     | 95   | 19.46  |
| Per cent \$50 and over Rental.....         | 0     | 93   | 10.16  |
| Median Rental.....                         | 8     | 178  | 29.39  |
| Per cent 2-3 person Families.....          | 17    | 79   | 42.97  |
| Per cent 5 and over person Families.....   | 6     | 62   | 30.96  |
| Length of Residence Under 2 years.....     | 16    | 78   | 36.72  |
| Length of Residence 5 years and over.....  | 5     | 69   | 41.76  |
| Per cent Native White, Native Parents..... | 0     | 79   | 28.00  |
| Per cent Foreign Born White.....           | 0     | 66   | 28.15  |
| Fertility Rate, Children under 5.....      | 3     | 67   | 31.03  |
| Fertility Rate, Children under 10.....     | 7     | 143  | 67.10  |
| Per cent Single.....                       | 17    | 70   | 32.66  |
| Per cent Married.....                      | 21    | 77   | 58.50  |
| Per cent Male.....                         | 37    | 91   | 50.17  |
| Sex Ratio.....                             | 60    | 1027 | 100.77 |
| Per cent 45 years of age and over.....     | 11    | 49   | 23.21  |
| Per cent 18-34 years of age.....           | 17    | 50   | 30.56  |
| Per cent Owned Homes                       | 0     | 78   | 29.24  |

\*There are 935 Census Tracts in Chicago. Some tracts have very few families, and by combining them with adjacent tracts of a similar character in order to have a total of approximately 300 families in each area, there are 759 areas used in the present study. A frequency distribution of each index is given in the appendix. The median shown in this table was computed before the tracts were put into the frequency distribution.

The above table gives a very striking picture of heterogeneity of the city's population composition. Two of the indexes which show the greatest range are the median rental and the sex ratio. One tract near the Stockyards Area in Chicago has a median rental of \$8 while a census tract on the Gold Coast (Lake Shore Drive) has a median rental of \$178. The median for all the tracts in the city was \$29.39 and 50 per cent of the tracts fell within a range from \$20.17 to \$38.61. The sex ratio shows an even greater range. The area on the west side of the central business

district, referred to as the area of "homeless men," has 1,027 men for every 100 women; on the south side in the apartment house area there was one tract with a very low sex ratio, 60 men for every 100 women. The sex ratio of 50 per cent of all the tracts fell within the narrow range of 95.34 to 106.20. The last index listed, the per cent of owned homes, showed a wide range. In a number of tracts in the city less than 1 per cent of the families owned their homes, while in one tract 78 per cent of the families owned their homes.

For each of the indexes there are a few tracts which have an extremely high or extremely low value as compared with the remainder of the census tracts in the city. In almost every case the extreme values at one end of the distribution (high values or low values) tend to make the distribution very skewed. In any correlation analysis, such as this study is undertaking, it is best for purposes of interpretation to have an approximately normal distribution of the values of the indexes. Extreme cases give undue weight to the size of the correlation coefficient.<sup>1</sup> The interpretation of a correlation between two variables or indexes is extremely difficult if there are a few extreme cases which distort the normality of the distribution. There were fifty census tracts which had extremely high or low values for one or more of the twenty-one indexes and thus were excluded from the correlation analysis. Fifty-eight other census tracts were excluded because each tract contained more than 60 per cent negro population. After a very careful analysis of these negro tracts it was found that they were quite different from the remaining tracts in that they too tended to have extreme values for such indexes as median rental, owned homes, and length of residence. No tract used in the correlation analysis had more than 35 per cent negro. The number of tracts finally used in the analysis was 651.

#### Correlation of Education with Other Population Indexes

Three indexes of educational status were computed and each one correlated with all the other variables. These indexes

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<sup>1</sup>For an excellent example of the influences of extreme cases on the correlation coefficient see F. C. Mills, Statistical Methods, pp. 405-09.

were: 1) the per cent of the population who had completed less than five grades in school; 2) the per cent who had completed eleven or more grades; and 3) the median grade completed. The first index places the emphasis upon that part of the population which has had very little formal education. The use of this index to describe census tracts would be suitable in describing the amount of uneducated persons living within the tract. The index using the per cent completing eleven grades or more measures the extent to which persons tended to complete high school. That is to say, the emphasis is upon the segment of the population which has completed at least three years of high school. This index might be a complement of the measure which was described first: it singles out the more highly educated persons who are to be used for the index of educational status in the same way that the per cent completing less than five grades singles out the least educated as a measure of educational status. The median grade completed minimizes the influence of the extremes of the continuum and gives a measure of educational status which takes into account all of the values and describes the central tendency of educational achievement in any tract.

The choice of any one of these indexes for the final analysis would depend upon the particular purpose to be served. By using all three of the indexes in the preliminary correlation analysis, it was possible to discover which of the indexes bore the highest relationship to the other population characteristics. Table XI gives the correlation coefficients showing these relationships.

The importance of a careful choice of the particular measure to be used for any one index is clearly brought out in this table. If one were interested in getting an index which would describe the general educational level in a census tract, it is important to choose carefully the data to be selected for the index since it makes considerable difference in the size of the correlation coefficients. For some of the population indexes it made very little difference which educational index was used, but for the most part there was a fairly large difference between the correlation coefficients.

For example, the first item in the table correlated with educational status is the percentage of families with 2-3 persons: an index to the proportion of small families in the tracts. If



the per cent completing less than five grades is used as the educational index, the coefficient of correlation is -.7523, as the proportion of persons who have very little education increases, the proportion of small families decreases. If the other end of

TABLE XI  
COEFFICIENTS OF CORRELATION SHOWING THE RELATION OF  
EDUCATIONAL STATUS TO 18 POPULATION INDEXES  
FOR THE 651 WHITE TRACTS IN CHICAGO\*

| Population Index                      | Index of Educational Status |                        |                 |
|---------------------------------------|-----------------------------|------------------------|-----------------|
|                                       | Less than<br>5th Grade      | 11th Grade<br>and Over | Median<br>Grade |
| Per cent 2-3 person Families.....     | -.7523                      | +.6213                 | +.7139          |
| Per cent 5 and over person Families.. | +.7409                      | -.6095                 | -.7072          |
| Length of Residence under 2 years.... | -.4052                      | +.5533                 | +.5388          |
| Length of Residence 5 years and over. | +.3085                      | -.4750                 | -.4747          |
| Per cent Native White, Native Parents | -.7582                      | +.7390                 | +.7781          |
| Per cent Foreign Born White.....      | +.7189                      | -.6638                 | -.7211          |
| Fertility Rate, Children under 5..... | +.5995                      | -.6751                 | -.6898          |
| Fertility Rate, Children under 10.... | +.6424                      | -.7201                 | -.7333          |
| Per cent Single.....                  | +.4872                      | -.3579                 | -.3534          |
| Per cent Married.....                 | -.2883                      | +.1855                 | +.1662          |
| Per cent Male.....                    | +.6145                      | -.6930                 | -.7489          |
| Sex Ratio.....                        | +.6330                      | -.7045                 | -.7640          |
| Per cent 45 years of age and over.... | -.6060                      | +.5956                 | +.5890          |
| Per cent 18-34 years of age.....      | -.2313                      | +.3818                 | +.3906          |
| Per cent Owned Homes.....             | +.1236                      | -.2558                 | -.2784          |
| Per cent under \$20 Rental.....       | +.7087                      | -.8117                 | -.7832          |
| Per cent \$50 and over Rental.....    | -.6208                      | +.7128                 | +.6993          |
| Median Rental.....                    | -.7346                      | +.8396                 | +.7945          |

\*See page 24 for explanation of tracts excluded from correlation analysis.

Note. Indexes of Educational Status, Economic Status, and Length of Residence showed a curvilinear relationship with the other indexes. In order to make all the coefficients of correlation comparable these three variables were expressed in logarithms, thus giving a straight line relationship.

the educational continuum were used the correlation coefficient is only +.6213. The difference disregarding the sign is .1310. In other words there is a much closer relationship between very little education and small families than between very much education and small families. Using the other measure of size of family this again becomes apparent. The proportion of large families is

more closely associated with an index of educational status which emphasizes the uneducated, than with the index which emphasizes the highly educated.

Mobility bears a higher relationship to the index of educational status which measures more highly educated population as over against the least educated. The proportion of families who have resided at their residence less than two years may be regarded as an index of high mobility. The relation of high mobility to the index of educational status measured by the per cent completed eleven grades or more, is indicated by a coefficient of correlation which is .1481 greater than the index measured by least educated. This difference between these two measures of education is even greater when, instead of using the index of high mobility, the proportion of families who have resided five years or more (low mobility) is used. With the exception of the two population indexes, 1) the percentage of native whites of native parents, and 2) the percentage of the population who are forty-five years of age and over, the difference between the correlation coefficients of the two educational indexes is fairly large.

How does the third index of educational status compare with these which emphasize the upper and lower end of the educational continuum? The median grade completed in only three instances bears a smaller relationship to the nine characteristics than either of the other two indexes. Besides this advantage of having, in general, a higher statistical relationship to the other variables, the median as an index is more suitable because, as indicated previously, it is the best measure of the general tendency of educational achievement in the tract since it does not place undue emphasis upon the extreme cases. On this basis the median has been chosen as the index of educational status in the present study; where the term educational status is used henceforth, it will be with reference to the median grade completed in school.

Referring again to Table XI, it will be noted that the highest correlation coefficient between educational status (median grade completed) and any other variable is +.7945. This high relationship is with the median rental which has been used as a measure of the economic status of census tracts. Since there are no data collected on incomes for families, the next best index to

economic status of families is the rent they pay. This median rental is computed by combining the value of owned homes with the monthly rental of rented homes; the monthly rental is assumed to be 1 per cent of the value of the home. This monthly rental equivalent has many flaws in it, but is at present the only possible method of getting at the economic status for all the families in any area.

When the proportion of homes renting for less than \$20 is used as the index of economic status and related to education, the size of the coefficient of correlation ( $-.7832$ ) is approximately the same as when the median rental is used. But when the upper end of the rental continuum is used (the proportion of families paying \$50 or more rental) the relationship is slightly smaller, the coefficient being  $+.6993$ . This latter measure of economic status takes into account the upper end of the rental distribution. The use of this index as a measurement of economic status places emphasis upon the homes in the higher rental groups which are fewer in number than the homes in the lower rental groups. Less than 5 per cent of all the census tracts in the city have a majority of the homes renting for \$50 or more. Both the index using less than \$20 rental and that using \$50 and over rental have very skewed distributions. The median rental has been chosen as the measure of economic status since it is less subject to influence by a few extreme homes whose rental may be very low or very high.

This correlation between educational status and economic status is very high:  $+.7945$ . The close association of high educational status and high economic status raises several questions. First, is this educational index measuring the same thing that the economic index is measuring? Is their high intercorrelation an indication that one is merely another way of expressing the same factor regarding each census tract? Could the educational index be used as a substitute for the economic index when describing population groups such as census tracts? Or is the educational index useful as a supplement to the economic index and combined they may represent something of a socio-economic index? The present study seeks to answer these questions and throw some light on the usefulness of an educational status index in the description of population groups. By analyzing the correlations of these two indexes to a series of other population character-

istics and making certain comparisons of these correlations, it will be possible to consider these questions in more detail. This method is essentially a statistical one, using partial correlations as the most important tool.



### CHAPTER III

#### THE RELATION BETWEEN EDUCATIONAL STATUS AND ECONOMIC STATUS

Educational status and economic status vary from tract to tract in Chicago. We have found that the variation in the one factor is very closely associated with the variation in the other; as educational status increases the amount of rental families pay also increases. This degree of relationship has been expressed in terms of a correlation coefficient of  $+ .7945$ . The present part of this study of educational status will attempt to give a more refined analysis of this relation of education to rental by considering a series of other population factors.

In Table XII is given the correlation of education and rental with eight other social characteristics in the population. For each characteristic there was computed two measures or indexes. It was shown in the last chapter that the size of the correlation may be different depending upon the end of the continuum used in constructing the index.

To select one measure for each of the characteristics the following method was employed: there was chosen those measures which differentiated between education and rental, and in case of the two measures differentiating about equally, there was chosen that one which correlated highest with both educational and rentals. For example, the difference between the correlation of education and rental with native whites of native parents was  $.1305$ , while the difference between the correlation with foreign born whites was  $.0896$ . The percentage of native whites of native parents was chosen to represent the nativity of each tract. The difference between the correlations with the per cent males was  $.1357$  and with the sex ratio  $.1345$ ; since the difference was about equal, the sex ratio was chosen since it had a higher relationship to both education and rental. On the same bases, age composition of tracts was measured by the per cent of persons forty-five years of age and over; fertility rate by the ratio of children under ten to women twenty to forty-four years of age; length of residence was represented by the proportion of families

living less than two years at their residence; the measure of the size of family was the percentage of families with five or more persons; marital condition was measured by the per cent married.

TABLE XII  
MEDIAN GRADE COMPLETED AND MEDIAN RENTAL CORRELATED  
WITH TWO MEASURES OF EACH OF EIGHT SOCIAL  
CHARACTERISTICS OF THE POPULATION\*

| Population Measure                     | Coefficients of Correlation |               |
|----------------------------------------|-----------------------------|---------------|
|                                        | Median Grade                | Median Rental |
| Per cent native whites, native parents | +.7781                      | +.6476        |
| Per cent foreign born whites.....      | -.7211                      | -.6315        |
| Per cent males.....                    | -.7489                      | -.6132        |
| Sex ratio.....                         | -.7640                      | -.6295        |
| Per cent 45 years of age and over....  | +.5890                      | +.4186        |
| Per cent 18-34 years of age.....       | +.3906                      | +.2578        |
| Fertility rate, children under 5.....  | -.6898                      | -.5635        |
| Fertility rate, children under 10..... | -.7333                      | -.5936        |
| Per cent single.....                   | -.3534                      | -.4814        |
| Per cent married.....                  | +.1662                      | +.4132        |
| Length of residence under 2 years....  | +.5388                      | +.3094        |
| Length of residence 5 years and over.. | -.4747                      | -.2069        |
| Per cent 2-3 person families.....      | +.7139                      | +.4748        |
| Per cent 5 and more person families... | -.6465                      | -.4684        |
| Per cent homes owned.....              | -.2784                      | +.0705        |

\*A complete table showing the intercorrelations of all the measures is included in the appendix.

#### The Relation of Educational Status and Economic Status to Selected Population Characteristics

The first step in the analysis is a comparison of the simple coefficients of correlation between education and the eight selected indexes with those between economic status and the same indexes. Table XIII gives the numerical comparison.

With the exception of the index of marital condition, each index bears a higher relationship to education than to economic status. Nativity, sex ratio, and fertility have the smallest difference, while marital condition, mobility, and large families show the greatest difference. All of the differences were subjected to the test<sup>1</sup> of the significant difference between

<sup>1</sup>Formula:  $\sigma r_1 - r_2 = \sqrt{\sigma^2 r_1 + \sigma^2 r_2}$ , where  $\sigma^2 r = \frac{(1 - r^2)^2}{N}$

TABLE XIII

CORRELATION OF EDUCATIONAL STATUS AND ECONOMIC STATUS  
WITH SELECTED POPULATION INDEXES

| Population Indexes                           | Correlation Coefficients |                 |
|----------------------------------------------|--------------------------|-----------------|
|                                              | Educational Status       | Economic Status |
| Per cent native white of native parents..... | +.7781                   | +.6476          |
| Sex ratio.....                               | -.7640                   | -.6295          |
| Per cent 45 years of age and over.....       | +.5890                   | +.4186          |
| Fertility rate, children under 10.....       | -.7333                   | -.5936          |
| Per cent married.....                        | +.1662                   | +.4132          |
| Per cent under two years residence.....      | +.5388                   | +.3094          |
| Per cent five and over person families       | -.6465                   | -.4684          |
| Per cent homes owned.....                    | -.2784                   | +.0705          |

two r's and the rank order beginning with the most significant difference was as follows:

1. Size of family
2. Mobility
3. Married
4. Nativity
5. Sex ratio
6. Older persons
7. Fertility rate
8. Home ownership

Even the last difference (home ownership) was significant from the standpoint of probability since the difference between the two r's could have occurred by chance only once in ten thousand times. Hence one may infer from this that with the exception of the per cent married, each of the factors have a significantly higher relation to educational status than to economic status; the per cent married has a significantly higher correlation with economic status. What inferences can be made about these relationships?

The first factor indicates that the percentage of native whites in a tract can account for the variability of education more completely than for the variability of rentals. This relationship is fairly feasible since there are a lot of tracts where the median rental is high and in which a great many second generation or foreign-born population live.

The fact that tracts with more women than men are the

tracts with the high educational status and economic status is not so readily explained. Examining those tracts with a low sex ratio (more women than men) it is found that they are located on the lake shore area both on the north and south side. These tracts are predominantly the better apartment house areas in which are located the residences of the unattached, single women who work in the offices in Loop business district. The areas of high sex ratio, conversely, are those areas of the lower economic classes which surround the industries. Here, again, are the areas in which many of the unskilled laborers live. In view of this apparent relation to economic status one would expect the correlation to be higher with rental than with education. Further examination of tracts which have a fairly low sex ratio, that is about 90 to 95, are also tracts in which there are low rentals. The weight of these census tracts is enough to lower the correlation coefficient so that it is smaller than that between education and sex ratio.

The correlation of the percentage of older persons with educational status is positive, that is, as educational status increases the percentage of older persons increases. This result is quite contrary to any previous guesses one might make about the relationship between these two variables. One would assume that those areas with more older persons would be the ones in which the general level of educational status was lower since educational facilities have been opened more to the younger age groups. The coefficient of correlation is lower than that between sex ratio or native whites and education, but still it is large enough to warrant speculation as to its meaning. One might make the speculation that the older persons live in the areas where there are concentrated many persons of higher education than themselves which thus weights the index of education. A probable explanation of the fairly low correlation of economic status and older persons is that there are many tracts with a large proportion of young adults which have a high median rental.

The fertility rate has been used as a measure of the birth rate in other studies. The results of this correlation are no different than the many studies which have been made of the relation of the birth rate to social and economic status. Low birth rates are associated with low educational and economic status. The relationship to education is higher, indicating a



closer relationship between the educational level of a population and its number of children than between the economic status and its birth rate.

The percentage married in tracts has only a slight relationship to the educational status. This is probably due to the fact that areas of low education have many young unmarried persons still living at home and that areas of high education have a large percentage of single persons, but not necessarily the ones who are still living with their own families. The fact that economic status is more closely associated with the proportion of married merely indicates that those tracts have smaller families and live in the better apartment house areas.

One of the interesting results of this section of the study was the relationship between length of residence of families and educational status. The more education in a tract the more the families were inclined to move. The percentage of families living less than two years at their residence was positively related to education. One might infer that education tends to be associated with mobility, with the desire to move about for better housing. The relation of length of residence to rentals was positive, but the coefficient was considerably lower. This lower coefficient can be explained by the fact that most of the areas of high home ownership have few families who have lived less than two years at their residence, and these same areas have a high economic status.

Large families show about the same relationship to educational status as the fertility rate. This index is a different measure than the fertility index since the size of family is really the size of the household. The household may contain no children and still have five or more persons. However, the inverse relationship between the proportion of large families and economic status is in accordance with many other studies. Referring to a previous paragraph in this chapter, it was pointed out that the size of family was the variable which had the highest significant difference between education and rental. This leads one to infer that tracts with large families have low educational status regardless of whether those families are made up of all adults or adults and children.

Home ownership had practically no correlation with rentals since most of the high economic status tracts are those with very

little home ownership while some had very high home ownership. These two types of areas negated the possible relationship. Since more than two-thirds of the families rent their dwelling units, educational status tended to be inversely related to home ownership. The chance fluctuation of this coefficient was high enough, however, so that the slight relationship which is shown almost disappears.

The Relation of Educational Status to Economic Status Holding  
Constant Selected Population Characteristics

In this first step in the analysis of the relation of educational status to economic status we have considered the simple correlation of two variables. We have considered education to be the dependent factor and have related a series of other population characteristics to it in an effort to account for its variability. Similarly we have attempted to account for the variation of economic status in Chicago. In this sort of analysis using simple correlation we neglect the influence of other factors. We have found some fairly high correlations between two variables studied, but it is obvious that, in general, social phenomena as represented by these population characteristics are affected by more than one factor. The fluctuations of education or rental in the city are due to a series of factors combined. Thus when we found a correlation of  $-.7333$  between education and the fertility rate we neglected the factor of economic status as accounting for some of this variation. In the correlation of rentals with fertility we ignored the influence of education.

It is clear that if it were possible to devise a method by which a single factor could be isolated while studying the relationship of two other factors, it would add considerably to the analysis of such phenomena which we have undertaken to study. We cannot emulate the chemist who can eliminate all elements except two in order to study the action of the one upon another; but we can, within limits, employ a method of holding constant mathematically, certain factors while studying the effect of one factor upon a second. The method which makes this possible is exceedingly useful in this kind of analysis. This is the method of partial correlation. It will be used in the refined study of the relation between these two variables, educational status and economic status.

It will be recalled that the correlation between educational status and economic status was +.7945. This correlation neglected or ignored the relationship each of these variables had to the other population indexes. By the use of partial correlation it is possible to relate education and rentals holding constant or removing the influence of these other indexes. Table XIV gives the coefficients of correlation between education and rentals holding each population factor constant. By comparing these coefficients with the original (+.7945) it is possible to determine the amount of influence each of these population characteristics have on the original correlation.

TABLE XIV  
CORRELATION OF EDUCATIONAL STATUS WITH ECONOMIC STATUS  
HOLDING CONSTANT EACH SELECTED POPULATION INDEX

| Correlation of Educational Status with<br>Economic Status Holding Constant | Correlation<br>Coefficient |
|----------------------------------------------------------------------------|----------------------------|
| Per cent native white of native parents . .                                | +.6071                     |
| Sex ratio . . . . .                                                        | +.6255                     |
| Per cent 45 years of age and over . . . . .                                | +.7465                     |
| Fertility rate children under 10 . . . . .                                 | +.6565                     |
| Per cent married . . . . .                                                 | +.8083                     |
| Per cent under two years residence . . . . .                               | +.7837                     |
| Per cent five and over person families . .                                 | +.7415                     |
| Per cent homes owned . . . . .                                             | +.8497                     |

By holding constant the factor of the percentage of native whites of native parentage the coefficient is reduced to +.6071. That is to say, if the proportion of native whites were the same in all the tracts in the city, the relation between education and rentals would be .1874 less than when this factor was neglected. If the sex ratio were the same in all the tracts, the correlation would drop about the same amount. If we remove the influence of the fertility rate in the tracts, again there is a sizeable drop in the correlation coefficient which indicates the relation of education and rentals. When the proportion of older persons and the proportion of large families are held constant, the relationship is only slightly lowered. The married population and the proportion of families with a short length of

residence have practically no influence on this correlation. The correlation actually is higher when the factor of home ownership is held constant. If home ownership were the same in all the tracts, the relation of educational status to economic status was to be closer: more of the variability in education could be accounted for by the variability in rentals.

From this initial use of partial correlation it has been possible to see the effect of removing the influence of one of the population characteristics. The holding constant of the proportion of native whites had the greatest effect of all the variables, but even this was relatively small. The relation between education and rentals still remained fairly high, a coefficient of  $+0.6071$ . By squaring this coefficient we can say that 36 per cent of the variability in education can be attributable to rentals. Thus it is possible to conclude that the relationship between these two measures is still high regardless of which population characteristic is held constant.

Comparison of the Importance of Educational Status  
and Economic Status in Their Relation to  
Selected Population Characteristics

Another application of partial correlation in this study is that of measuring the relationship between education and each of the other population indexes while the influence of economic status is removed or held constant. Similarly, by holding constant education, the relationship between rentals and these same indexes can be measured. Table XV gives the results of this application of the method of partial correlation.

This table presents some of the more significant findings of the study. The use of the partial correlation method here has enabled us to discover the relative importance of both education and rental in their association with the other population characteristics. The first column of the table gives the simple correlation between education and each of the eight variables ignoring or neglecting the factor of economic status. In the second column economic status is held constant while education is related to each population index. By comparing each pair of coefficients it is possible to see how much relationship there is remaining when the influence of rental is removed. In the third and fourth columns are given the similar correlations as in the first and second columns with the exception that economic status is the



dependent variable and educational status is the factor whose influence is removed.

TABLE XV

CORRELATION OF EDUCATIONAL STATUS WITH SELECTED POPULATION INDEXES HOLDING CONSTANT ECONOMIC STATUS, AND THE CORRELATION OF ECONOMIC STATUS WITH SELECTED POPULATION INDEXES HOLDING CONSTANT EDUCATIONAL STATUS

| Population Index                             | Correlation with Educational Status Holding Constant Economic Status |        | Correlation with Economic Status Holding Constant Educational Status |        |
|----------------------------------------------|----------------------------------------------------------------------|--------|----------------------------------------------------------------------|--------|
|                                              | Original "r"                                                         |        | Original "r"                                                         |        |
| Per cent native white of native parents..... | +.7781                                                               | +.5697 | +.6476                                                               | +.0771 |
| Sex ratio.....                               | -.7640                                                               | -.5593 | -.6295                                                               | -.0574 |
| Per cent 45 years of age and over.....       | +.5890                                                               | +.4649 | +.4186                                                               | -.1007 |
| Fertility rate children under 10.....        | -.7333                                                               | -.5355 | -.5936                                                               | -.0266 |
| Per cent married.....                        | +.1662                                                               | -.2931 | +.4132                                                               | +.4696 |
| Per cent under two years residence.....      | +.5388                                                               | +.5074 | +.3094                                                               | -.2320 |
| Per cent five and over person families.....  | -.7072                                                               | -.6246 | -.4684                                                               | +.2178 |
| Per cent homes owned....                     | -.2784                                                               | -.5520 | +.0705                                                               | +.5001 |

First let us examine the correlations with the proportion of native whites of native parentage. When rentals are held constant, the size of the coefficient showing the relation of nativity to education is diminished about 30 per cent. The correlation existing when rentals are held constant, however, is still large enough (+.5697) to be of significance. The proportion of native whites is important in accounting for the variability of education even if the rentals were the same throughout all the tracts. But when education is held constant while rentals is related to native whites the correlation practically disappears. This is to be interpreted in somewhat the following way: The variation in rentals cannot be attributed to the proportion of

native whites if the amount of education is held constant. Nativity is relatively unimportant in accounting for economic status when the factor of the educational status is taken into account.

This same interpretation applied to the relationships to sex ratio, older persons, and the fertility rate. In each case the correlation is somewhat reduced when rentals are held constant and the index is related to education. But in every case education still bears a fairly high relationship to these three factors. But removing the influence of education, the relationship between economic status and these factors is almost non-existent.

The remaining four population characteristics behave in quite a different manner. There was found to be a slight positive relationship between education and the percentage married. When the factor of rentals was held constant the correlation changed to an inverse relationship. That is, instead of a tendency for tracts with more married to have more education, the result obtained showed that the tracts with higher education tended to have the fewest married. The relation between economic status and the proportion married was even more marked after the factor of education was held constant. The simple correlation was increased from  $+.4132$  to  $+.4696$ . The influence of education on this correlation thus tended to obscure a part of the existing relationship between economic status and the per cent married.

The measure of the mobility of families showed an opposite result from that above. While holding constant economic status, the relationship between education and length of residence was only slightly affected. If it can be assumed that this index is a measure of mobility, then it may also be inferred that no matter how much rent families pay, the better educated ones tend to change their place of residence more frequently than the less educated. When no other factors are taken into account there is a small positive relation between economic status and mobility. This relationship became an opposite one when the influence of education was removed. The tracts in which there were higher rentals tended to have, instead, families who were less mobile than the families in the low rental tracts. Here, as in the relation of education to the proportion married, the third factor tended to obscure the relationship since there was actually an inverse relationship when one factor was held constant.

By holding constant the influence of economic status the relation of education to large families is only slightly reduced. Of all the population characteristics this index of large families bears the highest relationship to education after the influence of rentals is removed. There is still a high correspondence between low education and large families. However, when economic status is related to large families and education is held constant, the correlation again changes signs. The simple correlation was negative,  $-.4684$ , while the coefficient when education was held constant was positive,  $+.2178$ , showing a direct relationship between the amount of rentals families pay and the proportion of large families. A careful evaluation of this change of relationship brings out what seems to be a fairly obvious interpretation; where the educational status is the same, families with more persons have to pay more rent.

The use of partial correlation with home ownership as the independent factor produced results different from any of the foregoing analyses. The simple correlation between education and home ownership indicated a negative tendency, fewer homes owned accompanying more education. When the factor of economic status is held constant, the relationship is considerably higher, from a coefficient of  $-.2784$  to  $-.5520$ . There is a fairly high inverse relationship between educational status and home ownership when the influence of economic status is removed; the tracts with higher education tend to be those tracts which have more renters in them. Exactly the opposite of this relationship is that of rentals and home ownership. When the factor of education was not taken into account, there was practically no correlation. But when educational status was held constant, there was revealed a fairly high correlation between rentals and home ownership. Here, again, is a situation in which the correlation between two variables is obscured by the presence of another factor. When the influence of this third factor is removed, the relationship is brought out.

#### Relative Importance of Selected Population Characteristics in Predicting Educational Status and Economic Status

In our discussion thus far we have asked the question of what is the relationship between two variables. First, we considered only the simple correlation neglecting any other factors;

second, the correlation of two variables was calculated while holding constant a third. There is one other method to be employed in attempting to account for the variability of educational status and economic status in Chicago. We can combine the influences of several of the population characteristics; this is the method of multiple correlation. By this same method it is possible to calculate the regression equations which would enable us to predict educational status or economic status knowing the values of each of the selected indexes.

The eight population indexes were divided into two groups for this part of the study. The first four indexes, or what are called "independent variables," were chosen on the basis of the following criterion: (1) the coefficient of correlation shows a differentiation between education and rentals; (2) the index must have the lowest average correlation with the other indexes; and, (3) the index must have a high correlation with education and rentals. Using these criterion these population characteristics were chosen: (1) per cent native whites, (2) per cent married, (3) per cent under two years residence, and, (4) per cent of five and over person families. The remaining four indexes were considered as a secondary group.

The following code letters are used to indicate the ten variables which were used in this part of the study.

- |                  |                   |
|------------------|-------------------|
| a. Education     | f. Married        |
| b. Nativity      | g. Mobility       |
| c. Sex ratio     | h. Large families |
| d. Older persons | i. Rentals        |
| e. Fertility     | j. Home ownership |

The above symbols are also used in the partial correlation analysis.

By combining the influences of nativity, per cent married, mobility, and large families, the multiple correlation coefficient is .8283. Combining these same variables the relationship to economic status is .7229. By squaring these coefficients it is possible to state the amount of the variability in educational status and economic status which can be accounted for by the combination of the factors indicated. Thus 69 per cent of the variability in education can be attributed to these four independent variables, while only 52 per cent of economic status can be so attributed. These four variables are more closely associated with education than with rentals. Using the combined influence of the sex ratio, older persons, fertility, and home ownership



the relationship to education is almost exactly as the above; the coefficient is .8297 or again 69 per cent of the variability in education can be accounted for by the combination of these four indexes. The relation of economic status to the latter indexes is higher than the relation to the previous four indexes; the coefficient is .7818 or 61 per cent as compared with 52 per cent of the variability in rentals can be accounted for.

The question might be raised: how can the first four variables account for 69 per cent of education, and the last four account for the same percentage? Adding the two percentages one gets the apparently absurd result of 138 per cent. The question is easily answered since each of these eight variables bears some relationship to the other. Some of them are highly intercorrelated, while others bear only a slight relationship. The table of intercorrelation in the appendix referred to in the beginning of this chapter gives these correlations.

The final step in this study is the calculation of the regression or prediction equations. The principal use of these equations is to compare the regression coefficients when education is the dependent variable with the coefficients when rental is the dependent variable. This enables one to make certain conclusions as to the relative influences of each of the four population indexes in predicting education and rental. The equations using the first set of four factors are:

$$\begin{aligned}\log a &= +.6810 + .0025b + .0009f + .0984 \log g - .0020h \\ \log i &= +.6182 + .0006b + .0107f + .1338 \log g - .0004h\end{aligned}$$

It will be recalled that variables a, g, and i were translated into logarithms since they involved curvilinear correlations. Thus these equations as given predict the logarithm of the index of educational status and the logarithm of the index of economic status; these can easily be translated into natural numbers after computation.

By comparing the coefficients of b, f, log g, and h in the two equations it is possible to discover which of the four population characteristics are most relatively most important in relationship to educational status and economic status. Nativity and large families are more important in predicting education, and per cent married and mobility are more important in predicting rentals. That is to say, using these four indexes together, .0025 of the nativity index value is used in predicting education as over against .0006 for rentals; the proportion of the married used

in predicting rentals is .0107, while it is only .0009 in predicting education.

Using the combination of the other four population characteristics the following regression equations were computed:

$$\log a = +1.3207 - .0041c + .0025d - .0012e + .0005j$$

$$\log i = +2.3393 - .0082c + .0015d - .0038e + .0050j$$

The only index which is relatively more important in predicting education than rentals is the percentage of older persons. The sex ratio, fertility rate, and homes owned are all relatively more significant in predicting rentals.

#### Summary

In the first section it was found that the index of educational status was with one exception more highly correlated with the selected population indexes than was the index of economic status. The rank order of importance in relationship to education and rentals was as follows:

| <u>Education</u>  | <u>Rentals</u>    |
|-------------------|-------------------|
| 1. Nativity       | 1. Nativity       |
| 2. Sex ratio      | 2. Sex ratio      |
| 3. Fertility      | 3. Fertility      |
| 4. Large families | 4. Large families |
| 5. Older persons  | 5. Older persons  |
| 6. Mobility       | 6. Married        |
| 7. Home ownership | 7. Mobility       |
| 8. Married        | 8. Home ownership |

There was found to be a significant difference between each of the coefficients of correlations when comparing the relation of educational status to an index and the relation of economic status to the same variable. The more significant correlations showed that as education and rentals increased; the per cent of native whites increased; the percentage of older persons increased; mobility increased; the sex ratio decreased; the fertility rate decreased; and the size of family decreased.

By holding constant each of the eight population characteristics education and rentals were related; the only variables which showed any particular influence on the correlation of education and rentals were nativity, sex ratio, and the fertility rate. The conclusion drawn was that there existed a very high relationship between educational status and economic status even when the influence of each population index was removed.

There were some important results from the partial correlation analysis holding constant economic status while relating

education to each variable, and then holding constant education while economic status was related to each variable. It was found that there was practically no correlation between economic status and (1) nativity, (2) sex ratio, (3) older persons, and (4) the fertility rate when the influence of education was removed. Relating these same variables to education while removing the influence of rental, it was found that there was still a fairly high correlation. There was very little change in the relationship of education to mobility and large families when rentals were held constant. By holding constant rentals there was found to be a fairly high inverse correlation between education and home ownership, while a high direct relationship between rentals and home ownership was found when education was held constant. In the simple relation of education and rentals to these selected population indexes the correlations were all of the same direction; after the application of partial correlation four of the variables were oppositely related to education and rentals. As the per cent married increased, rentals increased, education decreased; as mobility increased, rentals decreased, and education increased; as large families increased, rentals increased and education decreased; and, as home ownership increased, rentals increased and education decreased.

#### Conclusions

This thesis has had four major objectives:

(1) To compare a measure of educational level reached in the population with two other measures of education, namely, school attendance and illiteracy.

(2) To describe the distribution of population in Chicago in 1934 according to educational level reached, pointing out the differences according to sex, race and nativity.

(3) To observe the variation produced in constructing, on three different bases, the index of educational status.

(4) To compare the measure of educational status with the measure of economic status in order to determine the extent to which the two measures were alike or different in serving as indices of a complex of social characteristics in the population.

This new measure of educational status in Chicago, namely, the last grade completed in school seemed to be more indicative of the actual educational level of a population group. It gave a

more detailed picture of the amount of formal schooling of the adult population. Using the last grade completed is not the most complete index which could be desired. A more adequate conception of educational status would include training received in vocational, business and evening schools as well as some qualifications made as to the type of school attended, for example, rural or city school.

The data on school attendance fails to give an accurate index to the educational status of the population since it is mainly concerned with the children; further, a person is counted as attending school if he attends only one day during the year preceding the date of the census. More important, it fails to throw any light on such questions as: the number of persons who have completed the eighth grade; the number who have completed high school; or the number who have completed some college work.

The inadequacy of illiteracy as an index of educational status is indicated by two points. First, it deals with only a very small segment of the total population; second, it is inaccurate as a measure of educational levels since it was found that tracts with a very low illiteracy rate showed a very wide variation in the amount of schooling completed.

In each nativity group except the foreign born white there was found to be an interesting difference between the grades completed by males and by females. The males had a greater proportion at both ends of the educational continuum; that is to say, there was a greater percentage of males with very little education and a greater proportion with considerable education. Several explanations, all of which point to a need for further research in the field, were given. The kinds of occupations which attract women migrants to the city probably demand a higher education than do those occupations which attract men to the city. Men probably drop out of school at an earlier age to seek employment, but those who do stay in school tend to go beyond the level reached by women.

The index of educational status was constructed on three different bases. The first placed the emphasis upon the proportion of the population who had very little education, the second upon the proportion having considerable education, and the third was the median grade completed. By correlating these three indexes to a series of social characteristics it was found that there were wide differences in the results obtained. Related to the size of



family, for example, each of the three educational indexes showed a different size correlation. The median grade completed was chosen as the index to be used in the analysis since it did not place any bias upon the extreme values at either end of the educational continuum.

With the exception of the per cent married each population measure had a significantly higher relationship to education than to rental. Education and rental were directly related to (1) native whites of native parents, (2) length of residence under two years, (3) proportion married, and (4) population 45 years of age and over. Educational and rental were inversely related to (1) large families, (2) fertility, and (3) ratio of males to females. There was a slight inverse relationship between education and homes owned, and a slight direct relationship between rental and homes owned.

By the use of partial correlation it was possible to relate educational status to economic status holding constant or removing the influence of each of the eight measures. When (1) native whites, (2) sex ratio, and (3) fertility were held constant, the relationship between education and rental was reduced about 25 per cent. The other five measures produced no large reduction in the size of the correlation.

The measure of educational status measures something different in the population than the economic status index. This result was secured from the following method. Education was related to native whites while holding constant rentals, and then rentals were related to native whites while holding constant education. It was possible in this way to determine whether the relationship between education and native whites still remained an important one when the influence of rentals was removed. This procedure was following for each of the eight social characteristics. When education was held constant, the correlation between rental and (1) native whites, (2) sex ratio, (3) older persons, and (4) fertility, practically disappeared. On the other hand when education was related to these same variables while holding constant rentals, there was still remaining a fairly high relationship. This was also true when education was related to high mobility and large families.

Compared to this present index of economic status (median rentals) this index of educational status (last grade completed)

seemed to represent a better single or inclusive index of the general complex of social characteristics of the population. This measure of education could not be used as a substitute for economic status since it was shown to be more closely associated with a greater number of variables. With the exception of the relation to the per cent married, education bore a significantly higher relationship to each of the population indexes. When partial correlation was employed as a tool, education was found to have had an opposite relationship to some characteristics from that of economic status. Perhaps if our measure of economic were a better one, income for example, the index of economic status might describe as fully the social characteristics of the population.



A P P E N D I X







TABLE XVII

PER CENT COMPLETED LESS THAN FIFTH GRADE IN SCHOOL OF  
THE POPULATION 18 YEARS OF AGE AND OVER BY  
CENSUS TRACTS, CITY OF CHICAGO: 1934

| Per Cent | Number<br>of<br>Tracts | Per Cent | Number<br>of<br>Tracts |
|----------|------------------------|----------|------------------------|
| 0- 2     | 150                    | 30-32    | 28                     |
| 3- 5     | 147                    | 33-35    | 19                     |
| 6- 8     | 102                    | 36-38    | 15                     |
| 9-11     | 69                     | 39-41    | 10                     |
| 12-14    | 38                     | 42-44    | 6                      |
| 15-17    | 38                     | 45-47    | 7                      |
| 18-20    | 37                     | 48-50    | 3                      |
| 21-23    | 23                     | 51-53    | --                     |
| 24-26    | 43                     | 54-56    | 1                      |
| 27-29    | 23                     |          |                        |

TABLE XVIII

PER CENT COMPLETED ELEVENTH GRADE OR MORE IN SCHOOL  
OF THE POPULATION 18 YEARS OF AGE AND OVER, BY  
CENSUS TRACTS, CITY OF CHICAGO: 1934

| Per Cent | Number<br>of<br>Tracts | Per Cent | Number<br>of<br>Tracts |
|----------|------------------------|----------|------------------------|
| 2- 5     | 36                     | 46-49    | 12                     |
| 6- 9     | 124                    | 50-53    | 22                     |
| 10-13    | 86                     | 54-57    | 10                     |
| 14-17    | 95                     | 58-61    | 16                     |
| 18-21    | 92                     | 62-65    | 12                     |
| 22-25    | 62                     | 66-69    | 9                      |
| 26-29    | 53                     | 70-73    | 5                      |
| 30-33    | 44                     | 74-77    | --                     |
| 34-37    | 32                     | 78-81    | 1                      |
| 38-41    | 30                     | 82-85    | 1                      |
| 42-45    | 17                     |          |                        |

TABLE XIX

MEDIAN GRADE COMPLETED IN SCHOOL OF THE POPULATION 18 YEARS  
OF AGE AND OVER BY CENSUS TRACTS, CHICAGO: 1934

| Median<br>Grade | Number<br>of<br>Tracts | Median<br>Grade | Number<br>of<br>Tracts |
|-----------------|------------------------|-----------------|------------------------|
| 4.6-4.9         | 1                      | 9.0- 9.3        | 30                     |
| 5.0-5.3         | 5                      | 9.4- 9.7        | 19                     |
| 5.4-5.7         | 12                     | 9.8-10.1        | 12                     |
| 5.8-6.1         | 22                     | 10.2-10.5       | 12                     |
| 6.2-6.5         | 45                     | 10.6-10.9       | 7                      |
| 6.6-6.9         | 78                     | 11.0-11.3       | 29                     |
| 7.0-7.3         | 74                     | 11.4-11.7       | 25                     |
| 7.4-7.7         | 110                    | 11.8-12.1       | 15                     |
| 7.8-8.1         | 136                    | 12.2-12.5       | 3                      |
| 8.2-8.5         | 71                     | 12.6-12.9       | 2                      |
| 8.6-8.9         | 49                     | 13.0-13.3       | 2                      |

TABLE XX

PER CENT NATIVE WHITE OF NATIVE PARENTAGE, OF THE  
POPULATION 18 YEARS OF AGE AND OVER, BY  
CENSUS TRACTS, CITY OF CHICAGO: 1934

| Per Cent | Number<br>of<br>Tracts | Per Cent | Number<br>of<br>Tracts |
|----------|------------------------|----------|------------------------|
| 0- 3     | 48                     | 40-43    | 42                     |
| 4- 7     | 51                     | 44-47    | 43                     |
| 8-11     | 60                     | 48-51    | 39                     |
| 12-15    | 57                     | 52-55    | 30                     |
| 16-19    | 50                     | 56-59    | 28                     |
| 20-23    | 48                     | 60-63    | 16                     |
| 24-27    | 66                     | 64-67    | 7                      |
| 28-31    | 68                     | 68-71    | 3                      |
| 32-35    | 49                     | 72-75    | 2                      |
| 36-39    | 51                     | 76-79    | 1                      |



TABLE XXI

PER CENT FOREIGN BORN WHITE OF THE POPULATION 18 YEARS OF AGE AND OVER BY CENSUS TRACTS, CITY OF CHICAGO: 1934

| Per Cent | Number<br>of<br>Tracts | Per Cent | Number<br>of<br>Tracts |
|----------|------------------------|----------|------------------------|
| 0- 3     | 51                     | 36-39    | 60                     |
| 4- 7     | 14                     | 40-43    | 65                     |
| 8-11     | 29                     | 44-47    | 31                     |
| 12-15    | 67                     | 48-51    | 37                     |
| 16-19    | 81                     | 52-55    | 18                     |
| 20-23    | 55                     | 56-59    | 6                      |
| 24-27    | 79                     | 60-63    | 5                      |
| 28-31    | 89                     | 64-67    | 1                      |
| 32-35    | 71                     |          |                        |

TABLE XXII

PER CENT NEGRO OF THE POPULATION 18 YEARS OF AGE AND OVER BY CENSUS TRACTS, CITY OF CHICAGO: 1934

| Per Cent | Number<br>of<br>Tracts | Per Cent | Number<br>of<br>Tracts |
|----------|------------------------|----------|------------------------|
| 0        | 617                    | 50-59    | 2                      |
| 1- 9     | 57                     | 60-69    | 5                      |
| 10-19    | 15                     | 70-79    | 5                      |
| 20-29    | 7                      | 80-89    | 12                     |
| 30-39    | 2                      | 90-99    | 37                     |
| 40-49    | --                     |          |                        |

TABLE XXIII

PER CENT MALE OF THE TOTAL POPULATION BY CENSUS  
TRACTS, CITY OF CHICAGO: 1934

| Per Cent     | Number<br>of<br>Tracts | Per Cent | Number<br>of<br>Tracts |
|--------------|------------------------|----------|------------------------|
| 40 and under | 3                      | 53       | 28                     |
| 41           | 5                      | 54       | 10                     |
| 42           | 7                      | 55       | 7                      |
| 43           | 9                      | 56       | --                     |
| 44           | 7                      | 57       | 3                      |
| 45           | 19                     | 58       | 3                      |
| 46           | 28                     | 59       | 2                      |
| 47           | 52                     | 60-69    | 9                      |
| 48           | 92                     | --       | --                     |
| 49           | 128                    | 76-80    | 4                      |
| 50           | 174                    | --       | --                     |
| 51           | 105                    | 91       | 1                      |
| 52           | 63                     |          |                        |

TABLE XXIV

SEX RATIO: NUMBER OF MALES PER 100 FEMALES OF THE TOTAL  
POPULATION, BY CENSUS TRACTS, CITY OF CHICAGO: 1934

| Sex Ratio | Number<br>of<br>Tracts | Sex Ratio | Number<br>of<br>Tracts |
|-----------|------------------------|-----------|------------------------|
| 60- 69    | 3                      | 114-117   | 17                     |
| 70- 73    | 7                      | 118-121   | 7                      |
| 74- 77    | 11                     | 122-125   | 6                      |
| 78- 81    | 11                     | 126-129   | 1                      |
| 82- 85    | 23                     | 130-139   | 4                      |
| 86- 89    | 40                     | 140-149   | 4                      |
| 90- 93    | 77                     | 150-199   | 6                      |
| 94- 97    | 119                    | 200-299   | 3                      |
| 98-101    | 143                    | 300- 399  | 3                      |
| 102-105   | 146                    | 420       | 1                      |
| 106-109   | 78                     | 1027      | 1                      |
| 110-113   | 48                     |           |                        |

TABLE XXV

PER CENT OF POPULATION 45 YEARS OF AGE AND OVER  
BY CENSUS TRACTS, CITY OF CHICAGO: 1934

| Per Cent | Number<br>of<br>Tracts | Per Cent | Number<br>of<br>Tracts |
|----------|------------------------|----------|------------------------|
| 11-12    | 3                      | 31-32    | 30                     |
| 13-14    | 9                      | 33-34    | 4                      |
| 15-16    | 44                     | 35-36    | 5                      |
| 17-18    | 77                     | 37-38    | 7                      |
| 19-20    | 116                    | 39-40    | --                     |
| 21-22    | 117                    | 41-42    | 2                      |
| 23-24    | 114                    | 43-44    | 1                      |
| 25-26    | 102                    | 45-46    | 1                      |
| 27-28    | 72                     | 47-48    | 1                      |
| 29-30    | 52                     | 49-50    | 2                      |

TABLE XXVI

PER CENT OF POPULATION 18 TO 34 YEARS OF AGE  
CENSUS TRACTS, CITY OF CHICAGO: 1934

| Per Cent | Number<br>of<br>Tracts | Per Cent | Number<br>of<br>Tracts |
|----------|------------------------|----------|------------------------|
| 17-18    | 2                      | 35-36    | 46                     |
| 19-20    | 2                      | 37-38    | 28                     |
| 21-22    | 4                      | 39-40    | 15                     |
| 23-24    | 20                     | 41-42    | 8                      |
| 25-26    | 60                     | 43-44    | 3                      |
| 27-28    | 135                    | 45-46    | --                     |
| 29-30    | 204                    | 47-48    | --                     |
| 31-32    | 159                    | 49-50    | 2                      |
| 33-34    | 71                     |          |                        |

TABLE XXVII

FERTILITY RATE  
RATIO OF CHILDREN UNDER 5 TO WOMEN 20-44 YEARS OF AGE,  
BY CENSUS TRACTS, CITY OF CHICAGO: 1934

| Rate  | Number<br>of<br>Tracts | Rate  | Number<br>of<br>Tracts |
|-------|------------------------|-------|------------------------|
| 3- 5  | 4                      | 36-38 | 68                     |
| 6- 8  | 11                     | 39-41 | 48                     |
| 9-11  | 15                     | 42-44 | 30                     |
| 12-14 | 17                     | 45-47 | 33                     |
| 15-17 | 35                     | 48-50 | 11                     |
| 18-20 | 48                     | 51-53 | 19                     |
| 21-23 | 52                     | 54-56 | 9                      |
| 24-26 | 66                     | 57-59 | 7                      |
| 27-29 | 92                     | 60-62 | --                     |
| 30-32 | 101                    | 63-65 | 1                      |
| 33-35 | 91                     | 66-68 | 1                      |

TABLE XXVIII

FERTILITY RATE  
RATIO OF CHILDREN UNDER 10 TO WOMEN 20-44 YEARS  
BY CENSUS TRACTS, CITY OF CHICAGO: 1934

| Rate  | Number<br>of<br>Tracts | Rate    | Number<br>of<br>Tracts |
|-------|------------------------|---------|------------------------|
| 7-12  | 3                      | 79- 84  | 75                     |
| 13-18 | 13                     | 85- 90  | 55                     |
| 19-24 | 12                     | 91- 96  | 28                     |
| 25-30 | 33                     | 97-102  | 26                     |
| 31-36 | 28                     | 103-108 | 13                     |
| 37-42 | 41                     | 109-114 | 20                     |
| 43-48 | 40                     | 115-120 | 9                      |
| 49-54 | 46                     | 121-126 | 9                      |
| 55-60 | 78                     | 127-132 | 5                      |
| 61-66 | 84                     | 133-138 | --                     |
| 67-72 | 84                     | 139-144 | 1                      |
| 73-78 | 56                     |         |                        |

TABLE XXIX

PER CENT SINGLE OF THE POPULATION 15 YEARS OF AGE AND OVER, BY CENSUS TRACTS, CITY OF CHICAGO: 1934

| Per Cent | Number<br>of<br>Tracts | Per Cent | Number<br>of<br>Tracts |
|----------|------------------------|----------|------------------------|
| 17-18    | 2                      | 41-42    | 23                     |
| 19-20    | 6                      | 43-44    | 11                     |
| 21-22    | 22                     | 45-46    | 9                      |
| 23-24    | 32                     | 47-48    | 4                      |
| 25-26    | 43                     | 49-50    | 4                      |
| 27-28    | 80                     | 51-52    | 3                      |
| 29-30    | 103                    | 53-54    | 3                      |
| 31-32    | 113                    | 55-59    | 2                      |
| 33-34    | 100                    | 60-64    | 3                      |
| 35-36    | 88                     | 65-69    | --                     |
| 37-38    | 65                     | 70-74    | 1                      |
| 39-40    | 42                     |          |                        |

TABLE XXX

PER CENT MARRIED OF THE POPULATION 15 YEARS OF AGE AND OVER, BY CENSUS TRACTS, CITY OF CHICAGO: 1934

| Per Cent | Number<br>of<br>Tracts | Per Cent | Number<br>of<br>Tracts |
|----------|------------------------|----------|------------------------|
| 20-24    | 3                      | 55-56    | 94                     |
| 25-29    | 1                      | 57-58    | 111                    |
| 30-34    | 2                      | 59-60    | 117                    |
| 35-36    | 3                      | 61-62    | 85                     |
| 37-38    | 5                      | 63-64    | 65                     |
| 39-40    | 4                      | 65-66    | 44                     |
| 41-42    | 6                      | 67-68    | 18                     |
| 43-44    | 9                      | 69-70    | 14                     |
| 45-46    | 5                      | 71-72    | 7                      |
| 47-48    | 14                     | 73-74    | 1                      |
| 49-50    | 25                     | 75-76    | --                     |
| 51-52    | 53                     | 77-78    | 1                      |
| 53-54    | 72                     |          |                        |



TABLE XXXI

PER CENT OF FAMILIES LIVING LESS THAN TWO YEARS AT PRESENT  
ADDRESS BY CENSUS TRACTS, CITY OF CHICAGO: 1934

| Per Cent | Number<br>of<br>Tracts | Per Cent | Number<br>of<br>Tracts |
|----------|------------------------|----------|------------------------|
| 16-18    | 7                      | 49-51    | 34                     |
| 19-21    | 17                     | 52-54    | 29                     |
| 22-24    | 32                     | 55-57    | 22                     |
| 25-27    | 74                     | 58-60    | 12                     |
| 28-30    | 88                     | 61-63    | 14                     |
| 31-33    | 82                     | 64-66    | 4                      |
| 34-36    | 88                     | 67-69    | 6                      |
| 37-39    | 84                     | 70-72    | 3                      |
| 40-42    | 61                     | 73-75    | 1                      |
| 43-45    | 60                     | 76-78    | 1                      |
| 46-48    | 40                     |          |                        |

TABLE XXXII

PER CENT OF FAMILIES LIVING FIVE YEARS OR MORE AT PRESENT  
ADDRESS BY CENSUS TRACTS, CITY OF CHICAGO: 1934

| Per Cent | Number<br>of<br>Tracts | Per Cent | Number<br>of<br>Tracts |
|----------|------------------------|----------|------------------------|
| 5- 7     | 3                      | 38-40    | 66                     |
| 8-10     | 4                      | 41-43    | 81                     |
| 11-13    | 7                      | 44-46    | 73                     |
| 14-16    | 14                     | 47-49    | 75                     |
| 17-19    | 18                     | 50-52    | 56                     |
| 20-22    | 24                     | 53-55    | 47                     |
| 23-25    | 37                     | 56-58    | 34                     |
| 26-28    | 40                     | 59-61    | 16                     |
| 29-31    | 36                     | 62-64    | 12                     |
| 32-34    | 53                     | 65-67    | 5                      |
| 35-37    | 56                     | 68-70    | 2                      |

TABLE XXXIII

PER CENT OF FAMILIES COMPOSED OF TWO AND THREE PERSONS  
BY CENSUS TRACTS, CITY OF CHICAGO: 1934

| Per Cent | Number<br>of<br>Tracts | Per Cent | Number<br>of<br>Tracts |
|----------|------------------------|----------|------------------------|
| Under 25 | 1                      | 52-54    | 58                     |
| 25-27    | 16                     | 55-57    | 27                     |
| 28-30    | 28                     | 58-60    | 27                     |
| 31-33    | 56                     | 61-63    | 15                     |
| 34-36    | 95                     | 64-66    | 10                     |
| 37-39    | 98                     | 67-69    | 3                      |
| 40-42    | 87                     | 70-72    | 2                      |
| 43-45    | 98                     | 73-75    | 1                      |
| 46-48    | 75                     | 76-78    | --                     |
| 49-51    | 61                     | 79-81    | 1                      |

TABLE XXXIV

PER CENT OF FAMILIES COMPOSED OF FIVE OR MORE PERSONS  
BY CENSUS TRACTS, CITY OF CHICAGO: 1934

| Per Cent | Number<br>of<br>Tracts | Per Cent | Number<br>of<br>Tracts |
|----------|------------------------|----------|------------------------|
| 6- 8     | 9                      | 36-38    | 89                     |
| 9-11     | 20                     | 39-41    | 74                     |
| 12-14    | 21                     | 42-44    | 45                     |
| 15-17    | 30                     | 45-47    | 22                     |
| 18-20    | 40                     | 48-50    | 12                     |
| 21-23    | 66                     | 51-53    | 9                      |
| 24-26    | 60                     | 54-56    | 1                      |
| 27-29    | 108                    | 57-59    | --                     |
| 30-32    | 85                     | 60-62    | 1                      |
| 33-35    | 67                     |          |                        |

TABLE XXXV

PER CENT OF FAMILIES PAYING LESS THAN \$20 MONTHLY RENTAL  
BY CENSUS TRACTS, CITY OF CHICAGO: 1934

| Per Cent | Number<br>of<br>Tracts | Per Cent | Number<br>of<br>Tracts |
|----------|------------------------|----------|------------------------|
| 0- 4     | 162                    | 50-54    | 29                     |
| 5- 9     | 96                     | 55-59    | 23                     |
| 10-14    | 78                     | 60-64    | 20                     |
| 15-19    | 51                     | 65-69    | 16                     |
| 20-24    | 43                     | 70-74    | 26                     |
| 25-29    | 32                     | 75-79    | 25                     |
| 30-34    | 32                     | 80-84    | 16                     |
| 35-39    | 24                     | 85-89    | 15                     |
| 40-44    | 29                     | 90-94    | 8                      |
| 45-49    | 33                     | 95-99    | 1                      |

TABLE XXXVI

PER CENT OF FAMILIES PAYING \$50 OR MORE MONTHLY RENTAL  
BY CENSUS TRACTS, CITY OF CHICAGO: 1934

| Per Cent | Number<br>of<br>Tracts | Per Cent | Number<br>of<br>Tracts |
|----------|------------------------|----------|------------------------|
| 0- 3     | 191                    | 48-51    | 10                     |
| 4- 7     | 142                    | 52-55    | 8                      |
| 8-11     | 88                     | 56-59    | 6                      |
| 12-15    | 58                     | 60-63    | 9                      |
| 16-19    | 58                     | 64-67    | 6                      |
| 20-23    | 39                     | 68-71    | 2                      |
| 24-27    | 30                     | 72-75    | 5                      |
| 28-31    | 23                     | 76-79    | 1                      |
| 32-35    | 18                     | 80-83    | 2                      |
| 36-39    | 21                     | 84-87    | 2                      |
| 40-43    | 20                     | 88-91    | 2                      |
| 44-47    | 17                     | 92-95    | 1                      |

TABLE XXXVII  
MEDIAN MONTHLY RENTAL BY CENSUS TRACT,  
CITY OF CHICAGO: 1934

| Median | Number<br>of<br>Tracts | Median  | Number<br>of<br>Tracts |
|--------|------------------------|---------|------------------------|
| 8-11   | 4                      | 52- 55  | 13                     |
| 12-15  | 78                     | 56- 59  | 5                      |
| 16-19  | 93                     | 60- 63  | 9                      |
| 20-23  | 84                     | 64- 69  | 5                      |
| 24-27  | 88                     | 70- 79  | 5                      |
| 28-31  | 71                     | 80- 89  | 3                      |
| 32-35  | 84                     | 90- 99  | 0                      |
| 36-39  | 93                     | 100-109 | 3                      |
| 40-43  | 53                     | -- --   | --                     |
| 44-47  | 48                     | 178     | 1                      |
| 48-51  | 19                     |         |                        |

TABLE XXXVIII  
PER CENT OF FAMILIES WHO OWN THEIR HOMES BY  
CENSUS TRACTS, CITY OF CHICAGO: 1934

| Per Cent | Number<br>of<br>Tracts | Per Cent | Number<br>of<br>Tracts |
|----------|------------------------|----------|------------------------|
| 0- 3     | 28                     | 40-43    | 53                     |
| 4- 7     | 45                     | 44-47    | 39                     |
| 8-11     | 47                     | 48-51    | 25                     |
| 12-15    | 39                     | 52-55    | 26                     |
| 16-19    | 57                     | 56-59    | 25                     |
| 20-23    | 75                     | 60-63    | 23                     |
| 24-27    | 61                     | 64-67    | 14                     |
| 28-31    | 84                     | 68-71    | 8                      |
| 32-35    | 53                     | 72-75    | 4                      |
| 36-39    | 45                     | 76-79    | 3                      |





